



Rocky Flats Environmental Technology Site

PRE-DEMOLITION SURVEY REPORT (PDSR)

**BUILDING 881 CLOSURE PROJECT
881 BASEMENT AREA**

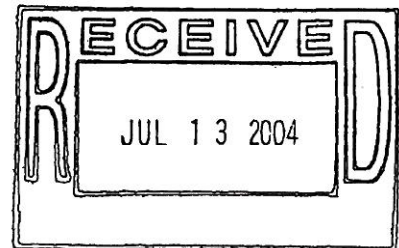
VOLUME 2

June 9, 2004

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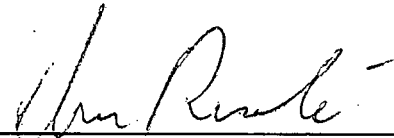
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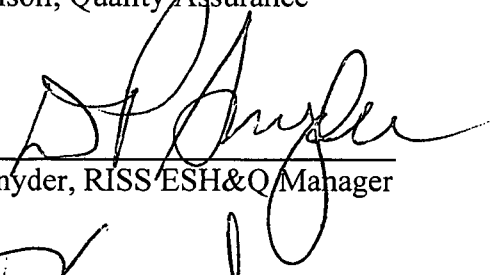
BUILDING 881 CLOSURE PROJECT BASEMENT AREA

VOLUME 2

June 9, 2004

Reviewed by: 
Don Risoli, Quality Assurance

Date: 6/9/04

Reviewed by: 
D.P. Snyder, RISS ESH&Q Manager

Date: 6/9/04

Approved by: 
Mike Swartz, K-H 881 D&D Project Manager

Date: 6.9.04

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ABBREVIATIONS/ACRONYMS

ACM	Asbestos Containing Material
Be	Beryllium
CDPHE	Colorado Department of Public Health and the Environment
DCGL _{EMC}	Derived Concentration Guideline Level – elevated measurement comparison
DCGL _w	Derived Concentration Guideline Level – Wilcoxon Rank Sum Test
D&D	Decontamination and Decommissioning
DDCP	Decontamination and Decommissioning Characterization Protocol
DOE	U.S. Department of Energy
DPP	Decommissioning Program Plan
DQA	Data quality assessment
DQOs	Data quality objectives
EPA	U.S. Environmental Protection Agency
FDPM	Facility Disposition Program Manual
HVAC	Heating, ventilation, air conditioning
HSAR	Historical Site Assessment Report
HEUN	Highly Enriched Uranyl Nitrate
IHSS	Individual Hazardous Substance Site
IVT	Independent Verification Team
IWCP	Integrated Work Control Package
K-H	Kaiser-Hill
LBP	Lead-based paint
LLW	Low-level waste
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
NORM	Naturally occurring radioactive material
NRA	Non-Rad-Added Verification
OSHA	Occupational Safety and Health Administration
PARCC	Precision, accuracy, representativeness, comparability and completeness
PCBs	Polychlorinated Biphenyls
PDS	Pre-Demolition Survey
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
RFCA	Rocky Flats Cleanup Agreement
RFETS	Rocky Flats Environmental Technology Site
RFFO	Rocky Flats Field Office
RLC	Reconnaissance Level Characterization
RLCR	Reconnaissance Level Characterization Report
RSA	Removable Surface Activity
RSP	Radiological Safety Practices
SVOCs	Semi-volatile organic compounds
TCLP	Toxicity Characteristic Leaching Procedure
TSA	Total Surface Activity
VOCs	Volatile Organic Compounds

EXECUTIVE SUMMARY

A Pre-Demolition Survey (PDS) was performed to enable compliant disposition and waste management of Building 881. Because this Type 2 Facility will be demolished, the characterization was performed in accordance with the Pre-Demolition Survey Plan (MAN-127-PDSP). Building surfaces characterized as part of this PDS included the Building 881 Basement interior floors, walls and ceilings. The Building 881 2nd floor, 2nd floor mezzanine and 881/883 Tunnel (Volume 1); and the 1st floor, and 1st floor mezzanine (Volume 3) interior floors, walls and ceilings will be reported in stand-alone PDSRs. The Building 881 exterior was characterized in accordance with Pre-Demolition Survey Plan (MAN-127-PDSP) requirements as part of the Building 881 Cluster RLCR, completed November 6, 2001. Environmental media beneath and surrounding Building 881 was not within the scope of this PDS and will be addressed in accordance with the Soil Disturbance Permit process and in compliance with RFCA.

The PDS encompassed both radiological and chemical characterization to enable compliant disposition and waste management pursuant to the D&D Characterization Protocol (MAN-077-DDCP). The characterization built upon physical, chemical and radiological hazards identified in the facility-specific Historical Site Assessment Report and Reconnaissance Level Characterization Report for the Building 881 Cluster.

Final "as left" PDS results indicate that radiological, beryllium, RCRA/CERCLA constituents and PCBs do not exist in excess of the PDSP unrestricted release limits. PCB ballasts, and other hazardous waste items (e.g., mercury thermostats, fluorescent light bulbs, mercury vapor light bulbs, mercury-containing gauges, circuit boards, leaded glass, and lead-acid batteries) have been removed and disposed of in compliance with Environmental Protection Agency (EPA) and Colorado Department of Public Health and Environment (CDPHE) regulations. PCBs in paint meet the unrestricted release criteria of the RSOP for Facility Disposition (risk assessment 761.62c). All remaining 881 building materials are inert.

Asbestos abatement was conducted in Building 881 prior to the PDS. Friable and non-friable asbestos containing building materials were removed per CDPHE, Regulation No. 8, Part B, *Emission Standards for Asbestos*. Cinderblock walls containing non-friable asbestos block filler remain in portions of the building. Prior to the use of explosives, the ACM block walls will be mechanically backfilled into the 881 basement and pit areas in accordance with the RFCA Contact Record (refer to RFETS Contact Record prepared by Steve Nesta on August 21, 2003). Small quantities of mastic remain in portions of the building and will be used as fill in the 881 basement.

Based upon this PDSR, the Building 881 basement can be demolished. Demolition concrete rubble will be used for backfill on-site per the RFCA Recycling Concrete RSOP. Appropriate approvals have been obtained for leaving portions of the facility in-place underground. To ensure the facility remains free of contamination and PDS data remain valid, Level 1 Isolation Controls have been established and the area posted accordingly.

1 INTRODUCTION

A Pre-Demolition Survey (PDS) was performed to enable compliant disposition and waste management of Building 881. Because this Type 2 Facility will be demolished, the characterization was performed in accordance with the Pre-Demolition Survey Plan (MAN-127-PDSP). Building surfaces characterized as part of this PDS included the Building 881 Basement interior floors, walls and ceilings. The Building 881 2nd floor, 2nd floor mezzanine and 881/883 Tunnel (Volume 1); and the 1st floor, and 1st floor mezzanine (Volume 3) interior floors, walls and ceilings will be reported in stand-alone PDSRs.

The Building 881 exterior was characterized in accordance with Pre-Demolition Survey Plan (MAN-127-PDSP) requirements as part of the Building 881 Cluster RLCR, completed November 6, 2001. Additional confirmatory surveys of Building 881 exterior and interior were performed and all results were less than the applicable PDS transuranic and uranium DCGL values. Environmental media beneath and surrounding Building 881 was not within the scope of this PDS and will be addressed in accordance with the Soil Disturbance Permit process and in compliance with RFCA.

As part of the Rocky Flats Environmental Technology Site (RFETS) Closure Project, numerous facilities will be removed, among these is Building 881. The location of this facility is shown in Attachment A, *Facility Location Map*. This facility no longer supports the RFETS mission and will be removed to reduce Site infrastructure, risks and/or operating costs.

Before this Type 2 Facility can be demolished, the Data Quality Objectives (DQOs) for a Pre-Demolition Survey (PDS) must be satisfied; this document presents the PDS results for Building 881 basement. The PDS was conducted pursuant to the Decontamination and Decommissioning Characterization Protocol (MAN-077-DDCP) and the Pre-Demolition Survey Plan for D&D Facilities (MAN-127-PDSP). The PDS built upon physical, chemical and radiological hazards identified in the facility-specific Historical Site Assessment Report and Reconnaissance Level Characterization Report for the Building 881 Cluster, dated November 6, 2001, Revision 0.

1.1 Purpose

The purpose of this report is to communicate and document the results of the Building 881 basement PDS effort. A PDS is performed prior to building demolition to define the pre-demolition radiological and chemical conditions of the facility. The pre-demolition conditions are compared with the release limits for radiological and non-radiological contaminants. PDS results will enable project personnel to make final disposition decisions, develop related worker health and safety controls, and estimate waste volumes by waste types.

1.2 Scope

This report presents the pre-demolition radiological and chemical conditions of Building 881 basement. The Building 881 2nd floor, 2nd floor Mezzanine and 881/883 Tunnel (Volume 2); and the 1st floor, and 1st floor mezzanine (Volume 3) interior floors, walls and ceilings will be reported in stand-alone PDSRs. Environmental media beneath and surrounding the facilities are not within the scope of this PDSR and will be addressed in accordance with the Soil Disturbance Permit process and in compliance with RFCA.

In order to facilitate survey unit design and building D&D activities, the following PDS data reporting liberties were taken. The PDS radiological survey data for Room 199A and the ventilation chase between Room 199A and Room 17 (SU 881E10) and stairwell 147A (SU 881K03) will be reported in the 881 1st Floor and 1st Floor Mezzanine PDSR. The 881 PDS radiological survey data for Elevator 149 (SU 881D05), stairwell 134A (SU 881C12), stairwell 111A (SU 881J10), and stairwell 133A (SU 881J12) will be reported in the 881 2nd Floor and 2nd Floor Mezzanine PDSR. The PDS beryllium sample data for the above areas on the basement level are reported in this PDSR.

1.3 Data Quality Objectives

The Data Quality Objectives (DQOs) used in designing this PDS were the same DQOs identified in the Pre-Demolition Survey Plan for D&D Facilities (MAN-127-PDSP). Refer to section 2.0 of MAN-127-PDSP for these DQOs.

2 HISTORICAL SITE ASSESSMENT

A Facility-specific Historical Site Assessment (HSA) and Reconnaissance Level Characterization (RLC) was conducted to understand the facility history and related hazards. The HSA consisted of facility walk-downs, interviews and document review, including review of the Historical Release Report, and were used to design the RLC. The Building 881 RLC was performed in the Fall of 2001, as part of the Building 881 Cluster RLCR (refer to *Reconnaissance Level Characterization Report for the Building 881 Cluster*, dated November 6, 2001, Revision 0. Based on the RLC results, beryllium and radiological contamination was identified, and Building 881 was classified as a Type 2 Facility. Therefore, a PDS characterization was required before demolition of the facility. The HSA, RLCR and in-process characterization results were used to identify PDS data gaps and needs, and to develop radiological and chemical PDS characterization packages. HSA and RLC documentation are located in the RISS Characterization Project files.

3 RADIOLOGICAL CHARACTERIZATION AND HAZARDS

3.1 In-Process Stripout and Decontamination

Radiological contamination was identified during the RLC, as well as during the in-process stripout and decontamination phase in numerous areas of the facility. Thus, extensive stripout and decontamination was required prior to the PDS. All potentially contaminated equipment, system piping, and block walls were removed from the building prior to PDS. After stripout and decontamination was completed, the areas were cleaned up, isolated and re-surveyed prior to turnover to the PDS Team.

3.2 Transuranic Versus and Uranium Activity Areas

Based on RLC data, and historical and process knowledge, transuranic and uranium activity were both a concern inside Building 881. Therefore, in-process media sampling was performed to determine transuranic and uranium areas of concern. Biased and random paint and concrete samples were collected throughout the building and were isotopically analyzed for transuranic and uranium contamination. Based on the isotopic results, Building 881 was divided into transuranic and uranium areas of concern. Any areas where the media samples were greater than the transuranic PDS unrestricted release criteria were designated transuranic areas and surveyed to the transuranic PDS unrestricted release criteria (i.e., SU 881M01). Although Survey Unit 881F01 was not suspect for transuranic activity, this area was not sampled, therefore SU 881F01 was surveyed to the more conservative the transuranic PDS unrestricted release criteria. All other areas were designated uranium areas and surveyed to the uranium PDS unrestricted release criteria.

Some areas that were initially designated as transuranic areas were decontaminated and re-sampled. If the re-sample results were less than the transuranic PDS unrestricted release criteria, then these areas were re-designated to uranium areas and surveyed to the uranium PDS unrestricted release criteria. Portions of Room 15 were re-designated from transuranic to uranium areas via this method. Refer to Attachment B-1, *Media Sample Results Table and Sample Location Map*, for the "as left" media sample results and the sample locations.

3.3 Stainless Steel Floor Areas

Building 881 contains about 40,000 square feet of floor space that is covered over with 14 gage 304L stainless steel plating. The stainless steel plating was welded to concrete-embedded stainless steel channeling in approximately 3 x 8 feet rectangles. There were no stainless steel areas within the scope of this PDS Report, therefore there is no stainless steel PDS data included in this report.

3.4 Building 881 Confirmatory Surveys (Exterior & Interior)

The Building 881 exterior was characterized in accordance with the Pre-Demolition Survey Plan (MAN-127-PDSP) requirements as part of the Building 881 Cluster RLCR completed November 6, 2001. All of the exterior surveys performed during the Building 881 Cluster RLCR were less than the applicable PDS uranium DCGL values. Additional confirmatory surveys of Building 881 exterior were performed during the 881 interior PDS survey, and all results were also less than the applicable PDS transuranic and uranium DCGL values. Additionally, interior confirmatory surveys (large area swipes and 100cm² area swipes) have been performed of all accessible areas. Refer to Attachment B-2, *881 Confirmatory Surveys, Radiological Data and Survey Maps* for the building exterior and interior basement confirmatory radiological survey data, survey locations, and radiological maps.

3.5 PDS Planning and Preparation

Building 881 was characterized for radiological hazards per the PDSP. Radiological characterization was performed to define the nature and extent of radioactive materials that may be present on the facility surfaces. Measurements were performed to evaluate the contaminants of concern. Based upon a review of the RLC, historical and process knowledge, building walk-downs, in-process survey and sample results, and MARSSIM guidance, a Radiological Characterization Plan was developed during the planning phase that describes the minimum survey requirements (refer to the RISS Characterization Project files for the 881 Radiological Characterization Plan).

Building 881 radiological survey unit packages were developed in accordance with Radiological Safety Practices (RSP) 16.01, *Radiological Survey/Sampling Package Design, Preparation, Control, Implementation and Closure*. Refer to Attachment B-3, *881 Survey Unit Maps* for the locations of these survey units. Total surface activity (TSA), removable surface activity (RSA), and scan measurements were collected in accordance with RSP 16.02 *Radiological Surveys of Surfaces and Structures*. Radiological survey data were verified, validated and evaluated in accordance with RSP 16.04, *Radiological Survey/Sample Data Analysis*. Quality control measures were implemented relative to the survey process in accordance with RSP 16.05, *Radiological Survey/Sample Quality Control*. Individual radiological survey unit packages are maintained in the RISS Characterization Project files.

3.6 PDS Survey Results

The table below summarizes the 881 Basement PDS radiological survey data by Survey Unit:

Note: The PDS radiological survey data for Room 199A and the ventilation chase between Room 199A and Room 17 (SU 881E10) and stairwell 147 (SU 881K03) will be reported in the 881 1st Floor and 1st Floor Mezzanine PDSR. The 881 PDS radiological survey data for Elevator 149 (SU 881D05), stairwell 134 (SU 881C12), stairwell 111 (SU 881J10), and stairwell 133 (SU 881J12) will be reported in the 881 2nd Floor and 2nd Floor Mezzanine PDSR. The PDS beryllium sample data for the above areas on the basement level are reported in this PDSR in Section 4.2.

All final "as left" PDS radiological survey results were less than the applicable PDSP unrestricted release limits. Radiological survey unit data, statistical analysis results, survey locations and radiological scan maps are presented in Attachment B-4 *Radiological Survey Unit Data Summary and Survey Maps*. To ensure the facility remains free of further contamination and PDS data remain valid, Level 1-Isolation Controls have been established and the areas posted accordingly.

4 CHEMICAL CHARACTERIZATION AND HAZARDS

Building 881 was characterized for chemical hazards per the PDSP. Chemical characterization was performed to determine the nature and extent of chemical contamination that may be present on, or in Building 881. Based upon a review of historical and process knowledge, visual inspections, and PDSP DQOs, additional sampling needs were determined. A Chemical Characterization Plan was developed during the planning phase that describes sampling requirements and the justification for the sample locations and estimated number of samples. The contaminants of concern were asbestos, beryllium, metals, RCRA/CERCLA constituents and polychlorinated biphenyls (PCBs). Refer to Attachment C, *Chemical Summary Data and Sample Maps*, for details on sample results and sample locations. Level 1 Isolation Control postings are displayed on affected structures to ensure no hazardous materials are introduced.

4.1 Asbestos

A survey of building materials suspected of containing asbestos was conducted before and during in-process stripout and decontamination. A CDPHE-certified asbestos inspector conducted the inspections and sampling in accordance with the *Asbestos Characterization Protocol, PRO-563-ACPR, Revision 1*. Building materials suspected of containing asbestos were identified for sampling at the discretion of the inspector. Prior to the PDS, friable and non-friable asbestos abatement and satisfactory clearance sampling was conducted per CDPHE, Regulation No. 8, Part B, *Emission Standards for Asbestos*. Cinderblock walls containing non-friable asbestos block filler remain in portions of the building as fill in the 881 basement and pit areas in accordance with the RFCA Contact Record (refer to RFETS Contact Record prepared by Steve Nesta on August 21, 2003). Small quantities of mastic remain in portions of the building and will be used as fill in the 881 basement. On this basis, no additional asbestos sampling was required or performed as part of the PDS.

4.2 Beryllium (Be)

During the in-process stripout and decontamination phase of the 881 project, all areas containing loose beryllium contamination were decontaminated to below the unrestricted release limit of $0.2 \mu\text{g}/100\text{cm}^2$. The use of fixatives was not necessary to decontaminate the areas below the unrestricted release limit. Since Building 881 was on the list of Known Beryllium Areas, both random and biased PDS sampling was required. Once the areas were de-posted from beryllium controls and the areas were isolated from the adjacent work areas, random and biased beryllium PDS swipes were collected.

In addition to the random and biased PDS swipes, 74 in-process de-posting beryllium swipes are also included in the below PDS Beryllium Results Summary Table, as biased swipe data. Building 881 was sub-divided into five (5) Beryllium Areas per the PDSP.

The five (5) areas were: 1) second floor mezzanines and 881/883 Tunnel, 2) second floor, 3) first floor mezzanines, 4) first floor, and 5) basement.

Random and biased beryllium smear samples were collected in Building 881 in accordance with the PDSP and the *Beryllium Characterization Procedure*, PRO-536-BCPR, Revision 0, September 9, 1999. The table below summarizes the "as left" PDS beryllium swipe data for the basement areas. All beryllium PDS swipe results were less than the action levels of $0.2 \mu\text{g}/100\text{cm}^2$ and $0.1 \mu\text{g}/100\text{cm}^2$. Detailed PDS beryllium laboratory swipe data and location maps are contained in Attachment C-1, *PDS Beryllium Data Summary and Sample Maps*. Detailed in-process biased beryllium laboratory swipe data are contained in Attachment C-2, *In-process Biased Beryllium Data*.

881 PDS Beryllium Summary Table

Beryllium Area	Random Swipes Required	Random Swipes Collected	Biased Swipes Collected	Swipes Results
Basement	49	56	2	All swipe results below PDS action levels
In-Process – Basement	0	0	74	All swipe results below PDS action levels
Totals	49	56	76	All swipe results below PDS action levels

4.3 RCRA/CERCLA Constituents [including metals and volatile organic compounds (VOCs)]

Based on the *Reconnaissance Level Characterization Report for the Building 881 Cluster*, dated November 6, 2001, and personnel interviews, facility walk-downs, in-process sample data, and a review of historical WEMS/WSRIC processes, Building 881 does not contain evidence of RCRA/CERCLA contamination. Furthermore, during the 881 RLC samples were taken and analyzed for metals, VOCs and SVOCs. All results were less than the regulatory limits confirming Building 881 is not contaminated by RCRA/CERCLA constituents. Therefore, no additional RCRA/CERCLA sampling was required or performed as part of the PDS.

All of the ancillary equipment associated with the permitted RCRA Storage Unit 887.2 was removed from Building 881 and appropriately managed and disposed of as LLM waste. All other temporary storage areas that may have managed RCRA regulated waste were evaluated and no additional closure activities were required. Closure of RCRA Storage Unit 887.2 cannot be completed until Building 887 meets clean closure criteria or is removed and disposed of per RCRA regulations, which will be addressed in the PDSR for Building 887.

The building may have contained some RCRA regulated items, such as mercury thermostats, fluorescent light bulbs, mercury vapor light bulbs, mercury containing gauges, circuit boards, and lead-acid batteries. However, these items have been removed and managed in accordance with the Colorado Hazardous Waste Act.

4.4 Polychlorinated Biphenyls (PCBs)

Based on the HSAR for the Building 881, personnel interviews, facility walk-downs and a review of historical WSRIC processes, Building 881 did house machinery containing PCB oil. As part of the removal of equipment from the pits, oil was drained from several machines and containerized. Because one of the oil containers tested positive for PCBs, RLC concrete core sample were collected and analyzed to check oil-stained areas beneath the equipment.

All results were below 1.0 ppm confirming the lack of PCB contamination in the Building 881. Therefore, no additional PCB sampling was required or performed as part of the PDS. Demolition concrete rubble will be used for backfill on-site per the RFCA Recycling Concrete RSOP. This concrete rubble material meets the unrestricted release criteria of the RSOP for Facility Disposition (specific to 40CFR 761.62c). All remaining 881 building materials are inert.

5 PHYSICAL HAZARDS

Physical hazards associated with Building 881 consists of those common to standard industrial environments, and include hazards associated with energized systems, utilities, and trips and falls. There are several below-grade levels in the building and a below-grade tunnel leading to Building 883. The facility has been relatively well maintained and is in good physical condition, therefore, does not present hazards associated with building deterioration. Physical hazards are controlled by the Site Occupational Safety and Industrial Hygiene Program, which is based on OSHA regulations, DOE orders, and standard industry practices.

6 DATA QUALITY ASSESSMENT

Data used in making management decisions for decommissioning of Building 881, and consequent waste management, is of adequate quality to support the decisions documented in this report. The data presented in this report (Attachments B and C) were verified and validated relative to DOE quality requirements, applicable EPA guidance, and original project DQOs.

In summary, the Verification and Validation (V&V) process corroborates that the following elements of the characterization process are adequate:

- ♦ the *number* of samples and surveys;
- ♦ the *types* of samples and surveys;
- ♦ the sampling/survey process as implemented "in the field"; and
- ♦ the laboratory analytical process, relative to accuracy and precision considerations.

Details of the DQA are provided in Attachment D.

7 DECOMMISSIONING WASTE TYPES AND VOLUME ESTIMATES

The decommissioning of Building 881 will not generate any wastes. All remaining 881 building materials are inert. PCB ballasts and other hazardous waste items have been removed and managed pursuant to Site PCB and waste management procedures. Demolition concrete rubble will be used for backfill on-site per the RFCA Recycling Concrete RSOP and approval obtained from EPA in 2001 letter *RE: Approval of the Risk-Based Approach for Polychlorinated Biphenyls (PCB) - Based Painted Concrete*.

There will be approximately 9,000 cubic yards of concrete recycle material, and 2,000 cubic yards of various metal, and 6 cubic yard of stainless flooring material that will be buried in place during the demolition of Building 881. The amount of metal is considered de minimis with respect to the 100,000 cubic yards of fill that will be required to bring the Building 881 Project Area to final grade, and has been addressed in the Facility Disposition RSOP Notification for the Building 881 demolition.

Cinderblock walls containing non-friable asbestos block filler remain in portions of the building as fill in the 881 basement and pits areas in accordance with the RFCA Contact Record (refer to RFETS Contact Record prepared by Steve Nesta on August 21, 2003). Small quantities of mastic remain in portions of the building and will be used as fill in the 881 basement. Locations and approximate quantities of non-friable asbestos block filler and mastic are as follows:

Block Filler

South Wall of Room 114	2,000 sf
Upper Walls of Elevator Room 159D	400 sf
Interior Wall Separating Rooms 283/283A	200 sf
Perimeter Walls of 250/250A/259/259A	800 sf

Mastic:

Wall Adhesive Pucks in Room 104 (assumed-ACM)	600 sf
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8 FACILITY CLASSIFICATION AND CONCLUSIONS

Based on the analysis of radiological, chemical and physical hazards, the Building 881 basement is classified as a RFCA Type 2 Facility pursuant to the RFETS Decommissioning Program Plan (DPP; K-H, 1999) and is ready for demolition. The PDS for the Building 881 basement was performed in accordance with the DDCP and PDSP, all PDSP DQOs were met, and all data satisfied the PDSP DQA criteria. Environmental media beneath and surrounding the facilities will be addressed at a future date in accordance with the Soil Disturbance Permit process and in compliance with RFCA.

Final "as left" PDS results indicated that radiological, beryllium, RCRA/CERCLA constituents and PCBs do not exist in excess of the PDSP unrestricted release limits. PCB ballasts, and other hazardous waste items (e.g., mercury thermostats, fluorescent light bulbs, mercury vapor light bulbs, mercury-containing gauges, circuit boards, leaded glass, and lead-acid batteries) have been removed and disposed of in compliance with Environmental Protection Agency (EPA) and Colorado Department of Public Health and Environment (CDPHE) regulations. All remaining 881 building materials are inert.

Asbestos abatement was conducted in Building 881 prior to the PDS. Friable and non-friable asbestos containing building materials were removed per CDPHE, Regulation No. 8, Part B, *Emission Standards for Asbestos*. Cinderblock walls containing non-friable asbestos block filler remain in portions of the building and will be used as fill in the 881 basement and pit areas in accordance with the RFCA Contract Record (refer to RFETS Contract Record prepared by Steve Nesta on August 21, 2003). Small quantities of mastic remain in portions of the building and will be used as fill in the 881 basement.

Based upon this PDSR, the Building 881 basement can be demolished. To ensure that the facility remains free of further contamination and that PDS data remain valid, Level 1-Isolation Controls have been established, and the area posted accordingly.

9 REFERENCES

- DOE/RFFO, CDPHE, EPA, 1996. *Rocky Flats Cleanup Agreement (RFCA)*, July 19, 1996.
- DOE Order 5400.5, *Radiation Protection of the Public and the Environment*
- DOE Order 414.1A, *Quality Assurance*
- EPA, 1994. *The Data Quality Objective Process*, EPA QA/G-4.
- K-H, 1999. *Decommissioning Program Plan*, June 21, 1999.
- MAN-131-QAPM, *Kaiser-Hill Team Quality Assurance Program*, Rev. 1, November 1, 2001.
- MAN-076-FDPM, *Facility Disposition Program Manual*, Rev. 3, January 1, 2002.
- MAN-077-DDCP, *Decontamination and Decommissioning Characterization Protocol*, Rev. 4, July 15, 2002.
- MAN-127-PDSP, *Pre-Demolition Survey Plan for D&D Facilities*, Rev. 1, July 15, 2002.
- MARSSIM - *Multi-Agency Radiation Survey and Site Investigation Manual* (NUREG-1575, EPA 402-R-97-016).
- PRO-475-RSP-16.01, *Radiological Survey/Sampling Package Design, Preparation, Control, Implementation, and Closure*, Rev. 1, May 22, 2001.
- PRO-476-RSP-16.02, *Pre-Demolition (Final Status) Radiological Surveys of Surfaces and Structures*, Rev. 1, May 22, 2001.
- PRO-477-RSP-16.03, *Radiological Samples of Building Media*, Rev. 1, May 22, 2001.
- PRO-478-RSP-16.04, *Radiological Survey/Sample Data Analysis for Final Status Survey*, Rev. 1, May 22, 2001.
- PRO-479-RSP-16.05, *Radiological Survey/Sample Quality Control for Final Status Survey*, Rev. 1, May 22, 2001.
- PRO-563-ACPR, *Asbestos Characterization Procedure*, Revision 0, August 24, 1999.
- PRO-536-BCPR, *Beryllium Characterization Procedure*, Revision 0, August 24, 1999.
- RFETS, *Environmental Waste Compliance Guidance #25, Management of Polychlorinated Biphenyls (PCBs) in Paint and Other Bulk Product Waste During Facility Disposition*.
- RFETS, *Environmental Waste Compliance Guidance #27, Lead-Based Paint (LBP) and Lead-Based Paint Debris Disposal*.
- RFETS, *RFCA RSOP for Recycling Concrete*, September 28, 1999
- Reconnaissance Level Characterization Report for the Building 881 Cluster*, Dated November 6, 2001, Revision 0.

ATTACHMENT A

Facility Location Map

Rocky Flats Environmental Technology Site

Building 881

Map Features

- ☐ Buildings Remaining
- ☐ D&D Facility
- ☐ Paved Roads
- ☐ Dirt Roads
- ☐ Lakes
- ☐ Streams
- ☐ Railroad Removed
- ☐ Railroad Remaining
- ☐ Fence Removed
- ☐ Fence Remaining

N

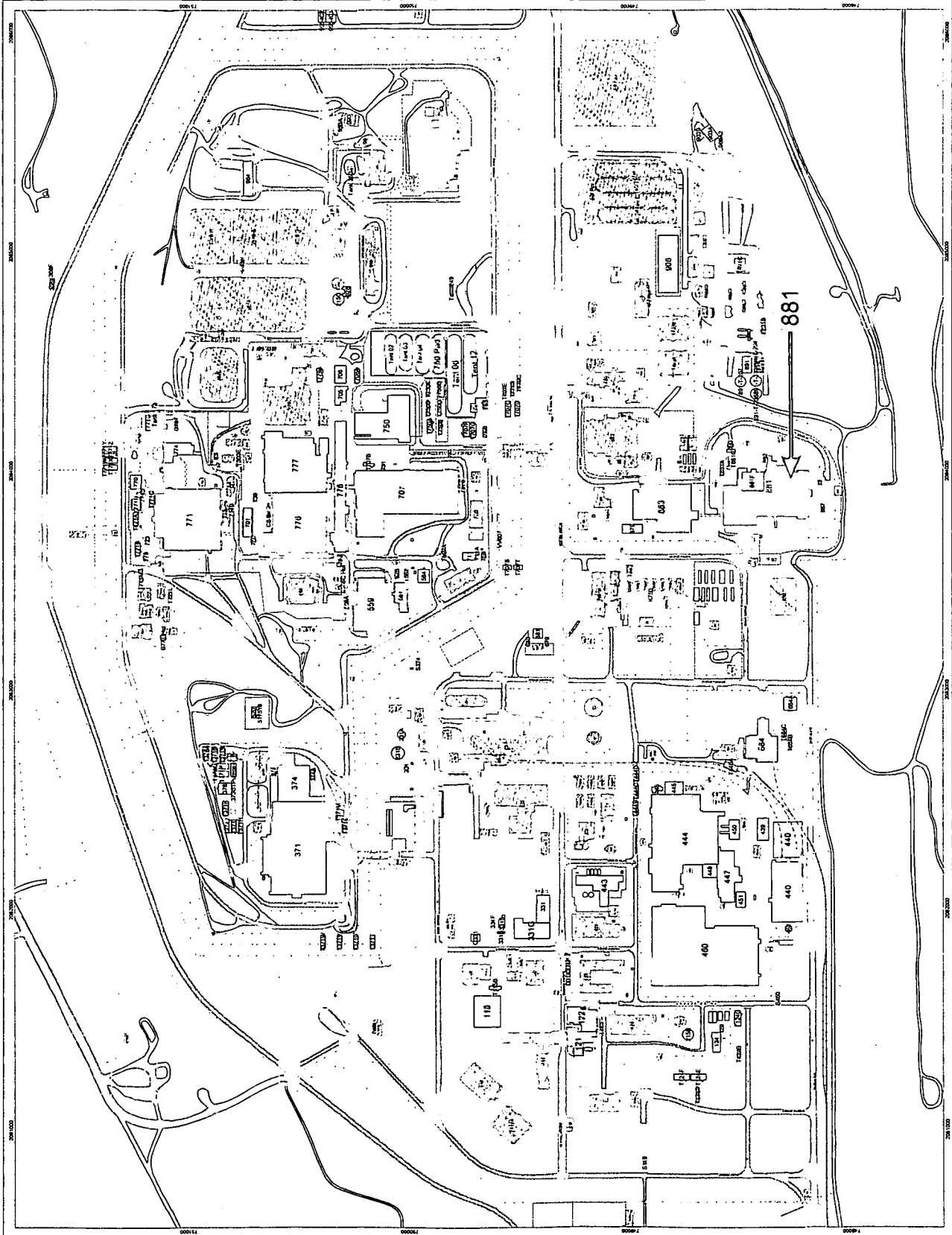
1:2,294
1 inch equals 100 feet

State Plane Coordinate Projection
Colorado Central Zone (3418)
Datum: NAD83

U.S. Department of Energy
Rocky Flats Environmental Technology Site

GIS Dept. (303) 866-7107

CH2M HILL



ATTACHMENT B-1

MEDIA SAMPLE RESULTS TABLE AND SAMPLE LOCATION MAP

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**Building 881 Basement
Paint/Media Sample Results Table**

Map Location	Room	Location Description	Uranium Result (dpm/100cm2)	Transuranic Result (dpm/100cm2)
25	10C	Wall, up 12'	11.8	0.6
26	10	Column, up 11'	55.9	0.7
27	10	Column, up 8'	7.3	0.2
28	10	Wall, up 0.5'	46.2	1.8
29	10B	Wall, up 12'	372.4	6.4
30	10	Floor	626.9	4.9
31	10B	Wall, up 11'	180.7	11.1
32	10	Wall, up 9'	313.6	18.8
33	10	Wall, up 9'	43.4	3.6
34	10B	Ceiling	6.5	0.9
35	10	Wall, up 8'	146.2	0.0
36	10B	Floor	63.4	1.5
37	10C	Wall, up 4'	72.6	8.7
39	10	Wall, up 6'	1,528.1	3.5
719	10	Floor	1,501.2	0.0
720	10	Floor	867.4	0.0
721	10	Floor	2,626.9	0.0
722	10C	Floor	2,626.9	0.0
858	12	Floor	93.9	0.0
859	12	Floor	7.1	0.0
860	15	Floor	1,846.9	0.0
861	15	Floor	85.0	0.0
862	15	Floor	1,254.2	0.0
865	15	Floor	80.9	0.0
867	17	Floor	80.9	0.0
868	17	Floor	106.8	0.0
869	16	Floor	37.4	0.0
870	19	Floor	6.6	0.0
871	13	Floor	3.1	0.0
872	15	Floor	7.1	0.0
888	16	Floor	0.0	0.0
889	16	Floor	0.0	0.0
890	12	Floor	37.5	0.0
891	11	Floor	0.0	0.0
892	12	Floor	0.0	0.0
893	15	Floor	0.0	0.0
894	15	Floor	0.0	0.0
895	15	Floor	0.0	0.0
904	15A	Wall	8.6	0.0
905	15A	Wall	0.0	0.0
906	15A	Wall	0.0	0.0
907	15A	Floor	1,391.0	0.0
908	15A	Floor	1,700.2	0.0

ATTACHMENT B-2

881 CONFIRMATORY SURVEYS, RADIOLOGICAL DATA AND SURVEY MAPS

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA						Survey Tracking # N/A	
Mfg. Ludlum	Mfg. NE Electra	Mfg. NE Electra	Survey Type: Contamination				
Model 2929	Model DP-6	Model DP-6	Building: 881				
Serial # 147742	Serial # N/A	Serial # 1290	Location: External Walls and Roof of B881				
Cal Due 9/25/04	Cal Due N/A	Cal Due 12/1/04	Purpose: Pre-Demolition Verification Survey				
Bkg 0.4 cpm α	Bkg N/A cpm α	Bkg 2.0 cpm α	RWP #: N/A				
Efficiency 35.10 %	Efficiency N/A %	Efficiency 22.20 %	Date: 6/4/04 Time: 1030				
MDA 18 dpm α	MDA ##### dpm α	MDA 42 dpm α	<div style="background-color: black; width: 100%; height: 100%;"></div>				
Mfg. Ludlum	Mfg. NE Electra	Mfg. NE Electra					
Model 2929	Model DP-6	Model DP-6					
Serial # 147742	Serial # N/A	Serial # 1290					
Cal Due 9/25/04	Cal Due N/A	Cal Due 12/1/04					
Bkg 107.7 cpm β	Bkg N/A cpm β	Bkg 842.0 cpm β	RCT: NA / NA / NA				
Efficiency 39.10 %	Efficiency N/A %	Efficiency 30.70 %	Print name Signature Emp. #				
MDA 205 dpm β	MDA ##### dpm β	MDA 448 dpm β					

PRN/REN #: N/A

Comments: Nuclides of concern are Uranium and Plutonium. Survey performed to verify contamination levels prior to demolition of 881. Performed swipes of exterior walls and roof of B881.

COPY

SURVEY RESULTS

#	LOCATION	ALPHA			BETA		
		Swipe	Direct	Wipe	Swipe	Direct	Wipe
		dpm/100cm ²	dpm/100cm ²	dpm/wipe	dpm/100cm ²	dpm/100cm ²	dpm/wipe
1	881 Exterior Walls	<18	N/A	<42	N/A	N/A	N/A
2	881 Exterior Walls	<18	N/A	N/A	N/A	N/A	N/A
3	881 Exterior Walls	<18	N/A	N/A	N/A	N/A	N/A
4	881 Exterior Walls	<18	N/A	<42	N/A	N/A	N/A
5	881 Exterior Walls	<18	N/A	N/A	N/A	N/A	N/A
6	881 Exterior Walls	<18	N/A	N/A	N/A	N/A	N/A
7	881 Exterior Walls	<18	N/A	N/A	N/A	N/A	N/A
8	881 Roof	<18	N/A	N/A	N/A	N/A	N/A
9	881 Roof	<18	N/A	<42	N/A	N/A	N/A
10	881 Roof	<18	N/A	N/A	N/A	N/A	N/A
11	881 Roof	<18	N/A	N/A	N/A	N/A	N/A
12	881 Roof	<18	N/A	N/A	N/A	N/A	N/A
13	881 Roof	<18	N/A	N/A	N/A	N/A	N/A
14	881 Roof	<18	N/A	N/A	N/A	N/A	N/A
15	881 Roof	<18	N/A	N/A	N/A	N/A	N/A
16	881 Roof	<18	N/A	N/A	N/A	N/A	N/A
17	881 Roof	<18	N/A	<42	N/A	N/A	N/A
18	881 Roof	<18	N/A	N/A	N/A	N/A	N/A
19	881 Exterior Walls	<18	N/A	N/A	N/A	N/A	N/A
20	881 Exterior Walls	<18	N/A	N/A	N/A	N/A	N/A

Date Reviewed: 6/7/04

RS Supervision:

Print Name

Signature

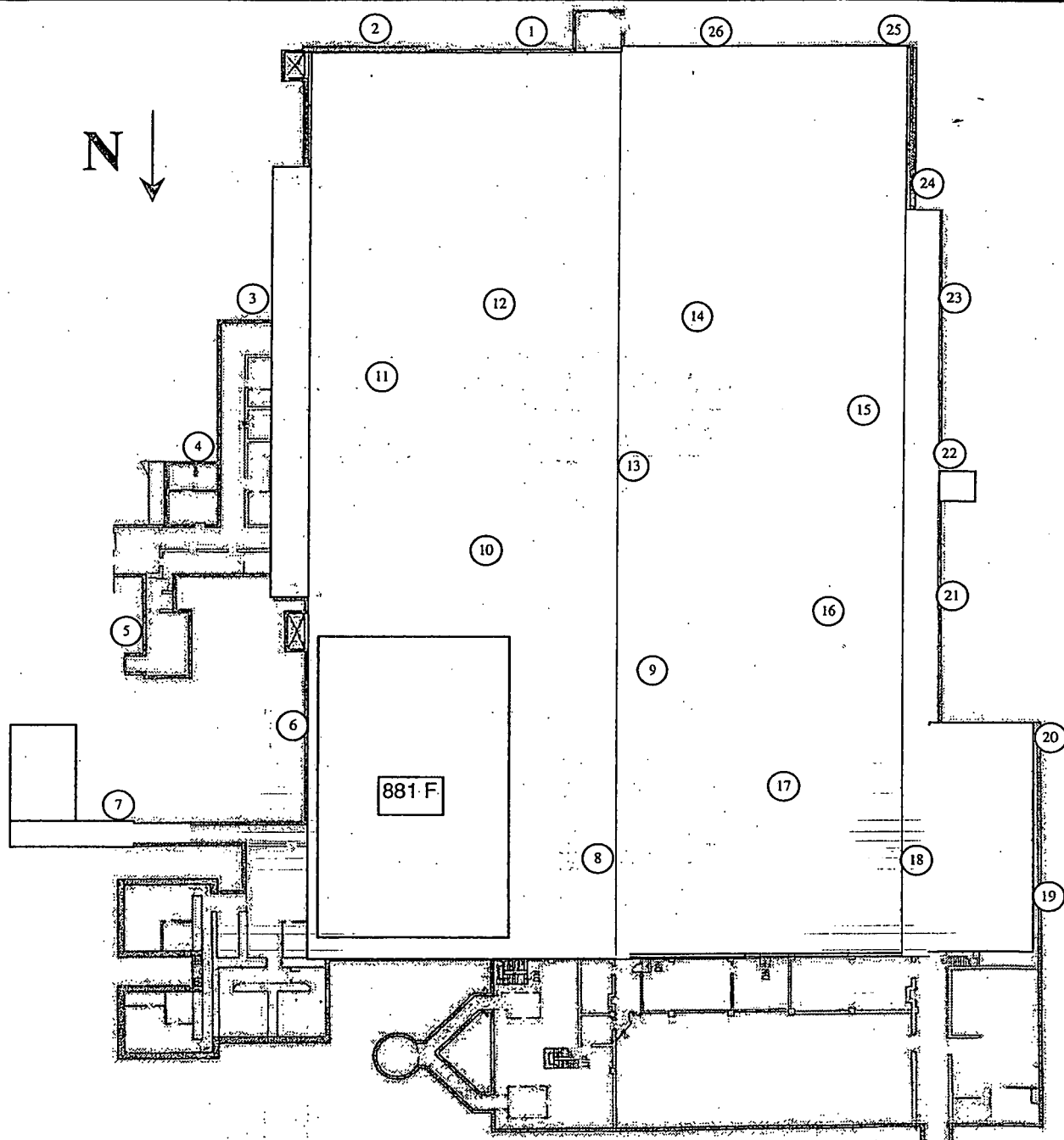
Emp. #

SURVEY RESULTS

3-PRO-164-RSP-07.01 (EFFECTIVE 7/12/01)

COPY

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE



24

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA						Survey Tracking # N/A	
Mfg.	Ludlum	Mfg.	NE Electra	Mfg.	NE Electra	Survey Type: Contamination	
Model	2929	Model	DP-6	Model	DP-6	Building: 881	
Serial #	143866	Serial #	N/A	Serial #	1290	Location: MU-M Tunnels	
Cal Due	11/20/04	Cal Due	N/A	Cal Due	12/1/04	Purpose: Pre-Demolition Verification Survey	
Bkg	0.6 cpm α	Bkg	N/A cpm α	Bkg	7.0 cpm α	RWP #: N/A	
Efficiency	34.60 %	Efficiency	N/A %	Efficiency	22.20 %	Date: 6/6/04 Time: 1030	
MDA	18 dpm α	MDA	##### dpm α	MDA	68 dpm α		
Mfg.	Ludlum	Mfg.	NE Electra	Mfg.	NE Electra		
Model	2929	Model	DP-6	Model	DP-6		
Serial #	143866	Serial #	N/A	Serial #	1290		
Cal Due	11/20/04	Cal Due	N/A	Cal Due	12/1/04		
Bkg	87.9 cpm β	Bkg	N/A cpm β	Bkg	804.0 cpm β	Print name Signature Emp. #	
Efficiency	37.00 %	Efficiency	N/A %	Efficiency	30.70 %	RCT: NA / NA / NA	
MDA	205 dpm β	MDA	##### dpm β	MDA	438 dpm β	Print name Signature Emp. #	

PRN/REN #: N/A

Comments: Nuclides of concern are Uranium and Plutonium. Survey performed to verify contamination levels prior to demolition of 881G. Performed swipe of floors, walls, and remaining equipment in 881G. 6/7/04

SURVEY RESULTS

#	LOCATION	ALPHA			BETA		
		Swipe	Direct	Wipe	Swipe	Direct	Wipe
		dpm/100cm ²	dpm/100cm ²	dpm/wipe	dpm/100cm ²	dpm/100cm ²	dpm/wipe
1	Floor of MU M Tunnels	<18	N/A	<68	N/A	N/A	N/A
2	Floor of MU M Tunnels	<18	N/A	N/A	N/A	N/A	N/A
3	Wall of MU M Tunnels	<18	N/A	N/A	N/A	N/A	N/A
4	Wall of MU M Tunnels	<18	N/A	<68	N/A	N/A	N/A
5	Floor of MU M Tunnels	<18	N/A	N/A	N/A	N/A	N/A
6	Floor of MU M Tunnels	<18	N/A	N/A	N/A	N/A	N/A
7	Wall of MU M Tunnels	<18	N/A	<68	N/A	N/A	N/A
8	Floor of MU M Tunnels	<18	N/A	N/A	N/A	N/A	N/A
9	Wall of MU M Tunnels	<18	N/A	<68	N/A	N/A	N/A
10	Wall of MU M Tunnels	<18	N/A	N/A	N/A	N/A	N/A
11	Wall of MU M Tunnels	<18	N/A	N/A	N/A	N/A	N/A
12	Floor of MU M Tunnels	<18	N/A	N/A	N/A	N/A	N/A
13	Floor of MU M Tunnels	<18	N/A	<68	N/A	N/A	N/A
14	Wall of MU M Tunnels	<18	N/A	N/A	N/A	N/A	N/A
15	Wall of MU M Tunnels	<18	N/A	N/A	N/A	N/A	N/A
16	Wall of MU M Tunnels	<18	N/A	N/A	N/A	N/A	N/A
17	Floor of MU M Tunnels	<18	N/A	<68	N/A	N/A	N/A
18	Floor of MU M Tunnels	<18	N/A	N/A	N/A	N/A	N/A
19	Floor of MU M Tunnels	<18	N/A	N/A	N/A	N/A	N/A
20	Floor of MU M Tunnels	<18	N/A	<68	N/A	N/A	N/A

Date Reviewed: 6/7/04 RS Supervision:

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

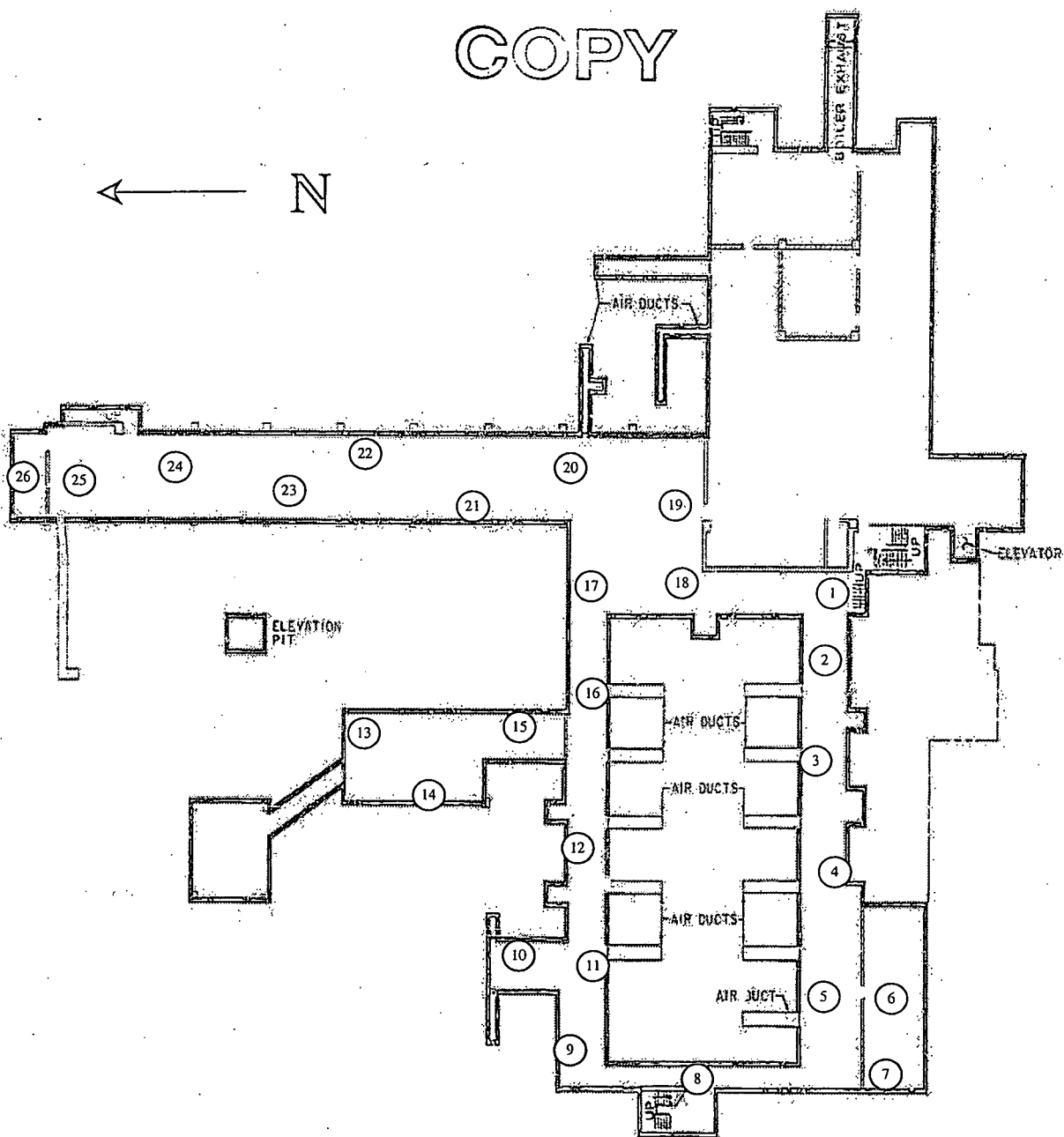
SURVEY RESULTS

COPY
BETA

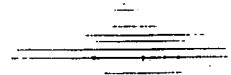
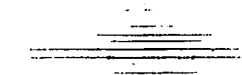
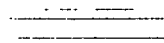
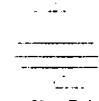
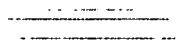
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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

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ATTACHMENT B-3
881 SURVEY UNIT MAPS



ATTACHMENT B-4

RADIOLOGICAL SURVEY UNIT DATA SUMMARY AND SURVEY MAPS

Survey Area: F**Survey Unit:** 881F01**Building:** 881**Description:** Building 881 MU-F, Room 100 Elevator Shaft

Rocky Flats Environmental Technology Site Final Radiological Survey Summary Results

Total Surface Activity Measurements

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 2

Nbr QC Required: 2

Nbr Random Measurements Performed: 15

Nbr Biased Measurements Performed: 2

Nbr QC Performed: 2

Alpha

Maximum: 22.7 dpm/100cm²Minimum: -6.8 dpm/100cm²Mean: 3.4 dpm/100cm²

Standard Deviation: 6.9

QC Maximum: 21.7 dpm/100cm²QC Minimum: 17.4 dpm/100cm²QC Mean: 19.5 dpm/100cm²Transuranic DCGL_w: 100.0 dpm/100cm²Transuranic DCGL_{EMC}: 300.0 dpm/100cm²

Removable Surface Activity Measurements

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 2

Nbr Random Measurements Performed: 15

Nbr Biased Measurements Performed: 2

Alpha

Maximum: 3.9 dpm/100cm²Minimum: -0.6 dpm/100cm²Mean: 2.0 dpm/100cm²

Standard Deviation: 1.4

Transuranic DCGL_w: 20.0 dpm/100cm²

Media Sample Results

Nbr Random Required: 0

Nbr Biased Required: 0

Nbr Random Collected: 0

Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

Survey Area: F**Survey Unit:** 881F01**Building:** 881**Description:** Building 881 MU-F, Room 100 Elevator Shaft

Instrument Data Sheet

Inst/RCT Number	RCT ID	Analysis Date	Instr Model	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency		A-Priori MDA (dpm/100cm ²)		Survey Type
							Alpha	Beta	Alpha	Beta	
1	712193	02/12/04	Electra	1681	DP-6	04/29/04	0.210	NA	48.0	NA	T/Q
2	712193	02/12/04	Electra	2352	DP-6	05/11/04	0.222	NA	48.0	NA	T/S
3	712193	02/12/04	SAC-4	960	NA	07/08/04	0.333	NA	10.0	10.0	R
4	712193	02/12/04	Electra	661	DP-6	07/07/04	0.167	NA	48.0	NA	T/S

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

Survey Area: F**Survey Unit: 881F01****Building: 881****Description: Building-881 MU-F, Room 100 Elevator Shaft****Random Removable Surface Activity Data Sheet**

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
881F01PRP-N001	3	2.4	N/A	
881F01PRP-N002	3	0.9	N/A	
881F01PRP-N003	3	3.9	N/A	
881F01PRP-N004	3	0.9	N/A	
881F01PRP-N005	3	0.9	N/A	
881F01PRP-N006	3	-0.6	N/A	
881F01PRP-N007	3	0.9	N/A	
881F01PRP-N008	3	3.9	N/A	
881F01PRP-N009	3	2.4	N/A	
881F01PRP-N010	3	2.4	N/A	
881F01PRP-N011	3	3.9	N/A	
881F01PRP-N012	3	0.9	N/A	
881F01PRP-N013	3	2.4	N/A	
881F01PRP-N014	3	2.4	N/A	
881F01PRP-N015	3	2.4	N/A	

Survey Area: F**Survey Unit:** 881F01**Building:** 881**Description:** Building 881 MU-F, Room 100 Elevator Shaft**Biased Removable Surface Activity Data Sheet**

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
881F01PBP-N016	3	0.9	N/A	
881F01PBP-N017	3	3.9	N/A	

Comments:

Survey Area: F**Survey Unit:** 881F01**Building:** 881**Description:** Building 881 MU-F, Room 100 Elevator Shaft**Random/QC Total Surface Activity Data Sheet**

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
881F01PRP-N001	2	5.6	N/A	
881F01PRP-N002	2	-2.5	N/A	
881F01QRP-N003	1	21.7	N/A	
881F01PRP-N003	2	22.7	N/A	
881F01PRP-N004	2	6.5	N/A	
881F01PRP-N005	2	3.4	N/A	
881F01PRP-N006	2	3.4	N/A	
881F01PRP-N007	2	6.5	N/A	
881F01PRP-N008	2	0.7	N/A	
881F01PRP-N009	2	0.7	N/A	
881F01QRP-N010	1	17.4	N/A	
881F01PRP-N010	2	9.7	N/A	
881F01PRP-N011	2	-1.6	N/A	
881F01PRP-N012	2	9.7	N/A	
881F01PRP-N013	2	0.7	N/A	
881F01PRP-N014	2	1.6	N/A	
881F01PRP-N015	2	3.8	N/A	

Survey Area: F**Survey Unit:** 881F01**Building:** 881**Description:** Building 881 MU-F, Room 100 Elevator Shaft

Biased Total Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
881F01PBP-N016	2	-6.8	N/A	
881F01PBP-N017	2	-6.8	N/A	

Comments: Scans performed at 2"/second at shaded areas indicated on map. All detected alpha count rates verified to be less than 100 dpm/100cm².

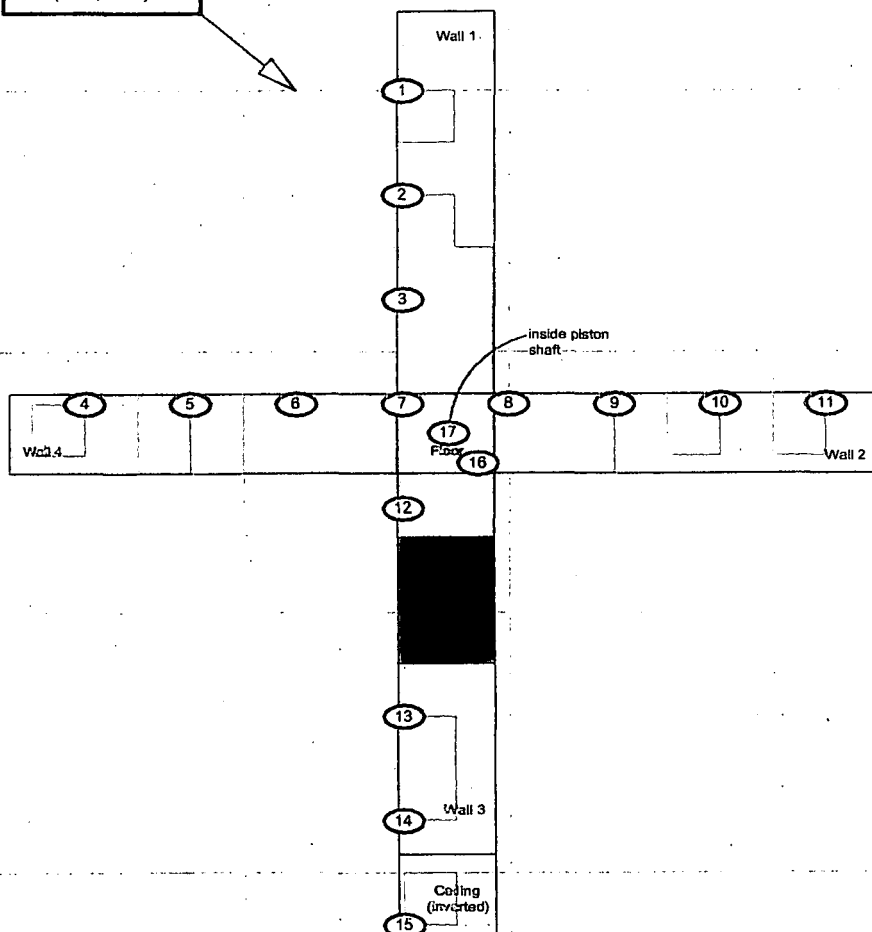
PRE-DEMOLITION SURVEY FOR B881

Survey Area: F Survey Unit: 881F01 Classification: 2
 Building: 881
 Survey Unit Description: Building 881 Management Unit F, Room 100
 Elevator Shaft
 Total Area: 55 sq. m. Total Floor Area: 3 sq. m.
 Grid Spacing for Survey Points: 2m. X 2m.

PAGE 1 OF 1

STARTING POINT
FOR SQUARE
SAMPLING GRID
(X11, Y20)

Elevator F

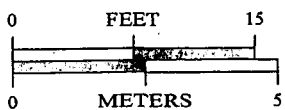


SURVEY MAP LEGEND

- Smear & TSA Location
- ◆ Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

Neither the United States Government nor Kaiser Hill Co., nor CH2MHILL, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.

Scan Survey Information
 Survey Instrument ID #(s) & RCT ID #(s):
 2, 4



1 inch = 12 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy
 Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-968-7707

Prepared for:



CH2MHILL
 Communications Group



MAP ID: 03-0568/881F01-SC

Mar. 8, 2004

Scan Area

Survey Area: F**Survey Unit:** 881F02**Building:** 881**Description:** Building 881, Management Unit F, Rooms 10, 10B, 10C Floor

Rocky Flats Environmental Technology Site Final Radiological Survey Summary Results

Total Surface Activity Measurements

Nbr Random Measurements Required: 75

Nbr Biased Measurements Required: 0

Nbr QC Required: 4

Nbr Random Measurements Performed: 75

Nbr Biased Measurements Performed: 0

Nbr QC Performed: 4

Alpha

Maximum: 237.1 dpm/100cm²Minimum: -26.0 dpm/100cm²Mean: 34.8 dpm/100cm²

Standard Deviation: 39.0

QC Maximum: 219.3 dpm/100cm²QC Minimum: 78.4 dpm/100cm²QC Mean: 126.1 dpm/100cm²Uranium DCGL_w: 5,000.0 dpm/100cm²Uranium DCGL_{EMC}: 15,000.0 dpm/100cm²

Removable Surface Activity Measurements

Nbr Random Measurements Required: 75

Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 75

Nbr Biased Measurements Performed: 0

Alpha

Maximum: 10.3 dpm/100cm²Minimum: -1.7 dpm/100cm²Mean: 1.4 dpm/100cm²

Standard Deviation: 3.1

Uranium DCGL_w: 1,000.0

Media Sample Results

Nbr Random Required: 0

Nbr Biased Required: 0

Nbr Random Collected: 0

Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

Survey Area: F**Survey Unit:** 881F02**Building:** 881**Description:** Building 881, Management Unit F, Rooms 10, 10B, 10C Floor

Instrument Data Sheet

Inst/RCT Number	RCT ID	Analysis Date	Instr Model	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency		A-Priori MDA (dpm/100cm ²)		Survey Type
							Alpha	Beta	Alpha	Beta	
1	711799	04/24/04	Electra	1261	DP-8	09/19/04	0.148	NA	93.0	NA	S
2	711447	04/24/04	Electra	1513	AP-6	09/17/04	0.181	NA	93.0	NA	S
3	711746	04/24/04	Electra	2404	DP-8	10/08/04	0.162	NA	93.0	NA	S
4	711451	04/24/04	Electra	681	DP-8	06/29/04	0.152	NA	93.0	NA	S
5	711746	04/24/04	Electra	3105	DP-6	09/17/04	0.202	NA	93.0	NA	T/S
6	711451	04/24/04	Electra	290	DP-6	09/16/04	0.213	NA	93.0	NA	T/S
7	712193	04/24/04	Ludlum 292	147742	NA	09/25/04	0.351	NA	16.0	NA	R
8	711447	04/29/04	Electra	1513	AP-6	09/17/04	0.181	NA	93.0	NA	S
9	711447	04/29/04	Electra	290	DP-6	09/16/04	0.213	NA	93.0	NA	T
10	711447	04/30/04	Electra	290	DP-6	09/16/04	0.213	NA	93.0	NA	T/S
11	712193	04/30/04	Ludlum 292	147742	NA	09/25/04	0.351	NA	16.0	NA	R
12	712193	04/30/04	Electra	667	DP-6	10/22/04	0.220	NA	93.0	NA	Q

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

Survey Area: F

Survey Unit: 881F02

Building: 881

Description: Building 881, Management Unit F, Rooms 10, 10B, 10C Floor

Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
881F02PRP-N005	11	4.0	N/A	
881F02PRP-N006	7	-1.1	N/A	
881F02PRP-N007	7	-1.1	N/A	
881F02PRP-N008	7	-1.1	N/A	
881F02PRP-N009	7	-1.1	N/A	
881F02PRP-N010	7	-1.1	N/A	
881F02PRP-N011	7	-1.1	N/A	
881F02PRP-N012	7	1.7	N/A	
881F02PRP-N013	7	-1.1	N/A	
881F02PRP-N014	7	-1.1	N/A	
881F02PRP-N015	7	-1.1	N/A	
881F02PRP-N016	7	4.6	N/A	
881F02PRP-N017	7	-1.1	N/A	
881F02PRP-N018	7	-1.1	N/A	
881F02PRP-N019	7	-1.1	N/A	
881F02PRP-N020	7	-1.1	N/A	
881F02PRP-N021	7	-1.1	N/A	
881F02PRP-N022	7	-1.1	N/A	
881F02PRP-N023	7	-1.1	N/A	
881F02PRP-N024	7	-1.1	N/A	
881F02PRP-N025	7	-1.1	N/A	
881F02PRP-N026	7	-1.1	N/A	
881F02PRP-N027	7	1.7	N/A	
881F02PRP-N028	7	-1.1	N/A	
881F02PRP-N029	7	1.7	N/A	
881F02PRP-N030	7	1.7	N/A	
881F02PRP-N031	7	1.7	N/A	
881F02PRP-N032	7	-1.1	N/A	
881F02PRP-N033	7	-1.1	N/A	

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Survey Area: F

Survey Unit: 881F02

Building: 881

Description: Building 881, Management Unit F, Rooms 10, 10B, 10C Floor

Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
881F02PRP-N034	7	1.7	N/A	
881F02PRP-N035	7	-1.1	N/A	
881F02PRP-N036	7	-1.1	N/A	
881F02PRP-N037	7	-1.1	N/A	
881F02PRP-N038	7	-1.1	N/A	
881F02PRP-N039	7	1.7	N/A	
881F02PRP-N040	7	-1.1	N/A	
881F02PRP-N041	7	-1.1	N/A	
881F02PRP-N042	7	-1.1	N/A	
881F02PRP-N043	7	4.6	N/A	
881F02PRP-N044	7	-1.1	N/A	
881F02PRP-N045	7	-1.1	N/A	
881F02PRP-N046	7	1.7	N/A	
881F02PRP-N047	7	-1.1	N/A	
881F02PRP-N048	7	7.4	N/A	
881F02PRP-N049	7	-1.1	N/A	
881F02PRP-N050	7	10.3	N/A	
881F02PRP-N051	7	1.7	N/A	
881F02PRP-N052	7	-1.1	N/A	
881F02PRP-N053	7	-1.1	N/A	
881F02PRP-N054	11	6.8	N/A	
881F02PRP-N055	11	1.1	N/A	
881F02PRP-N056	11	-1.7	N/A	
881F02PRP-N057	11	4.0	N/A	
881F02PRP-N058	11	9.7	N/A	
881F02PRP-N059	11	1.1	N/A	
881F02PRP-N060	11	4.0	N/A	
881F02PRP-N061	11	6.8	N/A	
881F02PRP-N062	11	4.0	N/A	

Survey Area: F**Survey Unit:** 881F02**Building:** 881**Description:** Building 881, Management Unit F, Rooms 10, 10B, 10C Floor**Random Removable Surface Activity Data Sheet**

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
881F02PRP-N063	11	1.1	N/A	
881F02PRP-N064	11	1.1	N/A	
881F02PRP-N065	11	1.1	N/A	
881F02PRP-N066	11	6.8	N/A	
881F02PRP-N067	11	4.0	N/A	
881F02PRP-N068	11	4.0	N/A	
881F02PRP-N069	11	6.8	N/A	
881F02PRP-N070	11	-1.7	N/A	
881F02PRP-N071	11	1.1	N/A	
881F02PRP-N072	11	6.8	N/A	
881F02PRP-N073	11	6.8	N/A	
881F02PRP-N074	11	4.0	N/A	
881F02PRP-N075	11	4.0	N/A	
881F02PRP-N076	11	4.0	N/A	
881F02PRP-N077	11	1.1	N/A	
881F02PRP-N078	11	6.8	N/A	
881F02PRP-N079	11	1.1	N/A	

Comments:

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Survey Area: F**Survey Unit:** 881F02**Building:** 881**Description:** Building 881, Management Unit F, Rooms 10, 10B, 10C Floor**Random/QC Total Surface Activity Data Sheet**

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
881F02PRP-N005	9	63.2	N/A	
881F02PRP-N006	5	98.5	N/A	
881F02QRP-N006	12	105.7	N/A	
881F02PRP-N007	6	49.1	N/A	
881F02PRP-N008	5	14.4	N/A	
881F02PRP-N009	6	25.6	N/A	
881F02PRP-N010	5	68.8	N/A	
881F02PRP-N011	6	35.0	N/A	
881F02PRP-N012	5	19.3	N/A	
881F02PRP-N013	6	77.3	N/A	
881F02PRP-N014	5	83.7	N/A	
881F02PRP-N015	6	44.4	N/A	
881F02PRP-N016	5	24.3	N/A	
881F02PRP-N017	6	25.6	N/A	
881F02PRP-N018	5	29.2	N/A	
881F02PRP-N019	6	39.7	N/A	
881F02PRP-N020	5	-5.4	N/A	
881F02PRP-N021	6	53.8	N/A	
881F02PRP-N022	5	39.1	N/A	
881F02PRP-N023	6	11.5	N/A	
881F02PRP-N024	5	14.4	N/A	
881F02PRP-N025	6	-26.0	N/A	
881F02PRP-N026	5	83.7	N/A	
881F02PRP-N027	6	96.1	N/A	
881F02PRP-N028	6	35.0	N/A	
881F02PRP-N029	5	-5.4	N/A	
881F02PRP-N030	6	20.9	N/A	

Survey Area: F**Survey Unit:** 881F02**Building:** 881**Description:** Building 881, Management Unit F, Rooms 10, 10B, 10C Floor**Random/QC Total Surface Activity Data Sheet**

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
881F02PRP-N031	5	39.1	N/A	
881F02PRP-N032	6	39.7	N/A	
881F02PRP-N033	5	49.0	N/A	
881F02PRP-N034	5	93.6	N/A	
881F02QRP-N034	12	101.1	N/A	
881F02PRP-N035	6	86.7	N/A	
881F02PRP-N036	5	29.2	N/A	
881F02PRP-N037	6	44.4	N/A	
881F02PRP-N038	5	34.2	N/A	
881F02PRP-N039	6	-16.6	N/A	
881F02PRP-N040	5	44.1	N/A	
881F02PRP-N041	6	77.3	N/A	
881F02PRP-N042	5	4.5	N/A	
881F02PRP-N043	6	11.5	N/A	
881F02PRP-N044	5	29.2	N/A	
881F02PRP-N045	6	-7.2	N/A	
881F02PRP-N046	5	4.5	N/A	
881F02PRP-N047	6	63.2	N/A	
881F02PRP-N048	5	98.5	N/A	
881F02PRP-N049	6	44.4	N/A	
881F02PRP-N050	5	237.1	N/A	
881F02QRP-N050	12	219.3	N/A	
881F02PRP-N051	6	63.2	N/A	
881F02PRP-N052	5	93.6	N/A	
881F02PRP-N053	6	35.0	N/A	
881F02PRP-N054	9	20.9	N/A	
881F02PRP-N055	9	25.6	N/A	

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Survey Area: F

Survey Unit: 881F02

Building: 881

Description: Building 881, Management Unit F, Rooms 10, 10B, 10C Floor

Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
881F02PRP-N056	9	2.2	N/A	
881F02PRP-N057	9	20.9	N/A	
881F02PRP-N058	9	2.2	N/A	
881F02PRP-N059	10	-16.6	N/A	
881F02PRP-N060	10	11.5	N/A	
881F02PRP-N061	9	58.5	N/A	
881F02PRP-N062	9	25.6	N/A	
881F02PRP-N063	9	16.2	N/A	
881F02PRP-N064	9	20.9	N/A	
881F02PRP-N065	9	39.7	N/A	
881F02PRP-N066	10	6.8	N/A	
881F02PRP-N067	10	-2.5	N/A	
881F02PRP-N068	10	-16.6	N/A	
881F02PRP-N069	10	2.2	N/A	
881F02PRP-N070	10	6.8	N/A	
881F02PRP-N071	9	35.0	N/A	
881F02PRP-N072	9	-7.2	N/A	
881F02PRP-N073	9	35.0	N/A	
881F02PRP-N074	9	-2.5	N/A	
881F02PRP-N075	9	67.9	N/A	
881F02QRP-N075	12	78.4	N/A	
881F02PRP-N076	9	-2.5	N/A	
881F02PRP-N077	9	39.7	N/A	
881F02PRP-N078	9	-2.5	N/A	
881F02PRP-N079	9	11.5	N/A	

Comments: Scans performed at 4"/second at shaded areas indicated on map. All detected alpha count rates verified to be less than 5,000 dpm/100cm².

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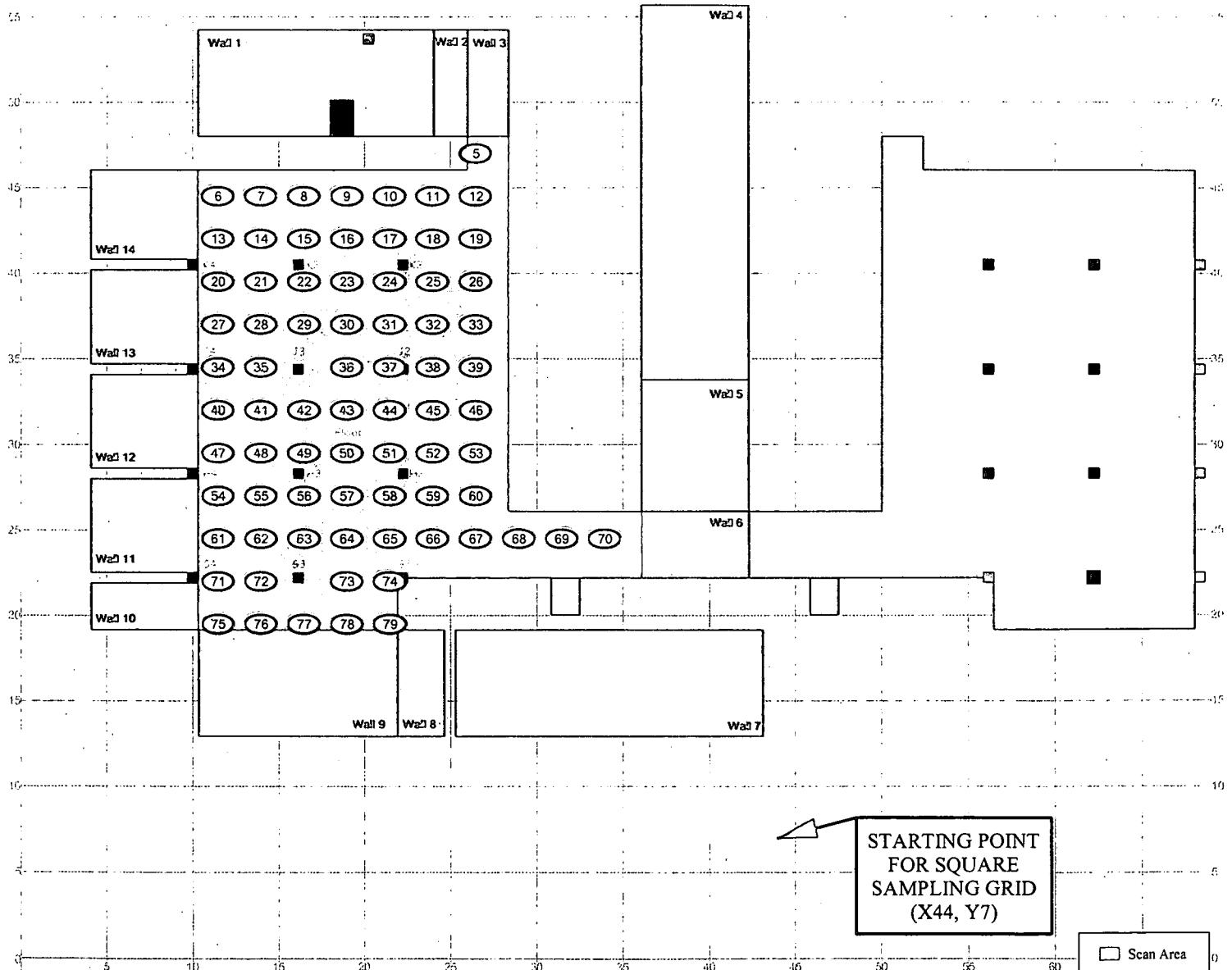
45

PRE-DEMOLITION SURVEY FOR B881

Survey Area: F Survey Unit: 881F02 Classification: 1
 Building: 881
 Survey Unit Description: B881 Basement Management Unit F, Rooms 10, 10B & 10C, Floor
 Total Area: 519 sq. m. Total Floor Area: 519 sq. m.
 Grid Spacing for Survey Points: 2.5 m. X 2.5 m.

PAGE 1 OF 1

Room 10



STARTING POINT
FOR SQUARE
SAMPLING GRID
(X44, Y7)

SURVEY MAP LEGEND (6) Smear & TSA Location (6) Smear, TSA & Sample Location (6) Open/Inaccessible Area (6) Area in Another Survey Unit	Neither the United States Government nor Kaiser Hill Co., nor CH2MHill, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.	N ←	0 FEET 40 0 METERS 10 1 inch = 30 feet 1 grid sq. = 1 sq. m.	U.S. Department of Energy Rocky Flats Environmental Technology Site Prepared by: GIS Dept. 303-966-7707 Prepared for: CH2MHILL Communications Group KAISER HILL MAP ID: 03-0568/881F02-SC May 11, 2004
Scan Survey Information Survey Instrument ID #(s) & RCT ID #(s): 1-6, 8 & 10				

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Survey Area: F**Survey Unit:** 881F03**Building:** 881**Description:** Building 881, Management Unit F, Rooms 10, 10B, 10C Walls and Ceiling

Rocky Flats Environmental Technology Site Final Radiological Survey Summary Results

Total Surface Activity Measurements

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 0

Nbr QC Required: 2

Nbr Random Measurements Performed: 17

Nbr Biased Measurements Performed: 0

Nbr QC Performed: 2

Alpha

Maximum: 83.2 dpm/100cm²Minimum: -17.6 dpm/100cm²Mean: 22.0 dpm/100cm²

Standard Deviation: 27.0

QC Maximum: 34.1 dpm/100cm²QC Minimum: 25.0 dpm/100cm²QC Mean: 29.6 dpm/100cm²Uranium DCGL_W: 5,000.0 dpm/100cm²Uranium DCGL_{EMC}: 15,000.0 dpm/100cm²

Removable Surface Activity Measurements

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 17

Nbr Biased Measurements Performed: 0

Alpha

Maximum: 7.7 dpm/100cm²Minimum: -1.1 dpm/100cm²Mean: 2.2 dpm/100cm²

Standard Deviation: 2.9

Uranium DCGL_W: 1,000.0

Media Sample Results

Nbr Random Required: 0

Nbr Biased Required: 0

Nbr Random Collected: 0

Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

Survey Area: F

Survey Unit: 881F03

Building: 881

Description: Building 881, Management Unit F, Rooms 10, 10B, 10C Walls and Ceiling

Instrument Data Sheet

Inst/RCT Number	RCT ID	Analysis Date	Instr Model	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency		A-Priori MDA (dpm/100cm ²)		Survey Type
							Alpha	Beta	Alpha	Beta	
1	711746	04/24/04	Electra	290	DP-6	09/16/04	0.213	NA	93.0	NA	T/S
2	711799	04/24/04	Electra	1261	DP-8	09/19/04	0.148	NA	93.0	NA	S
3	711447	04/24/04	Electra	2404	DP-8	10/08/04	0.162	NA	93.0	NA	S
4	711451	04/24/04	Electra	681	DP-8	06/29/04	0.152	NA	93.0	NA	S
5	711451	04/24/04	Electra	3105	DP-6	09/17/04	0.202	NA	93.0	NA	T/S
6	712193	04/24/04	Ludlum 292	147742	NA	09/25/04	0.351	NA	16.0	NA	R
7	711447	04/30/04	Electra	1513	AP-6	09/17/04	0.181	NA	93.0	NA	S
8	711447	04/30/04	Electra	290	DP-6	09/16/04	0.213	NA	93.0	NA	T/S
9	712193	04/30/04	Ludlum 292	147742	NA	09/25/04	0.351	NA	16.0	NA	R
10	712193	04/30/04	Electra	667	DP-6	10/22/04	0.220	NA	93.0	NA	Q

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

Survey Area: F**Survey Unit:** 881F03**Building:** 881**Description:** Building 881, Management Unit F, Rooms 10, 10B, 10C Walls and Ceiling

Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
881F03PRP-N001	6	-1.1	N/A	
881F03PRP-N002	6	1.7	N/A	
881F03PRP-N003	6	4.6	N/A	
881F03PRP-N004	6	-1.1	N/A	
881F03PRP-N005	6	-1.1	N/A	
881F03PRP-N006	6	1.7	N/A	
881F03PRP-N007	6	1.7	N/A	
881F03PRP-N008	6	-1.1	N/A	
881F03PRP-N009	9	7.7	N/A	
881F03PRP-N010	9	2.0	N/A	
881F03PRP-N011	9	2.0	N/A	
881F03PRP-N012	9	4.8	N/A	
881F03PRP-N013	6	-1.1	N/A	
881F03PRP-N014	9	2.0	N/A	
881F03PRP-N015	9	4.8	N/A	
881F03PRP-N016	9	2.0	N/A	
881F03PRP-N017	9	7.7	N/A	

Comments:

Survey Area: F**Survey Unit:** 881F03**Building:** 881**Description:** Building 881, Management Unit F, Rooms 10, 10B, 10C Walls and Ceiling**Random/QC Total Surface Activity Data Sheet**

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
881F03PRP-N001	1	29.3	N/A	
881F03PRP-N002	1	24.6	N/A	
881F03QRP-N002	10	34.1	N/A	
881F03PRP-N003	1	-12.9	N/A	
881F03PRP-N004	1	29.3	N/A	
881F03PRP-N005	1	-17.6	N/A	
881F03PRP-N006	1	-8.2	N/A	
881F03PRP-N007	1	-17.6	N/A	
881F03PRP-N008	1	24.6	N/A	
881F03PRP-N009	8	19.9	N/A	
881F03PRP-N010	8	38.7	N/A	
881F03QRP-N010	10	25.0	N/A	
881F03PRP-N011	8	34.0	N/A	
881F03PRP-N012	8	10.5	N/A	
881F03PRP-N013	1	34.0	N/A	
881F03PRP-N014	5	58.4	N/A	
881F03PRP-N015	5	83.2	N/A	
881F03PRP-N016	5	38.6	N/A	
881F03PRP-N017	8	5.8	N/A	

Comments:

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Survey Area: M	Survey Unit: 881M01	Building: 881																				
Description: Building 881, Management Unit M, Room 17 Floor																						
Rocky Flats Environmental Technology Site Final Radiological Survey Summary Results																						
Total Surface Activity Measurements																						
Nbr Random Measurements Required: 20	Nbr Biased Measurements Required: 0	Nbr QC Required: 2																				
Nbr Random Measurements Performed: 20	Nbr Biased Measurements Performed: 0	Nbr QC Performed: 2																				
<table border="1" style="margin: auto; padding: 10px;"> <tr> <td colspan="2" style="text-align: center;">Alpha</td> </tr> <tr> <td style="padding: 2px;">Maximum:</td> <td style="padding: 2px;">81.8 dpm/100cm²</td> </tr> <tr> <td style="padding: 2px;">Minimum:</td> <td style="padding: 2px;">-2.3 dpm/100cm²</td> </tr> <tr> <td style="padding: 2px;">Mean:</td> <td style="padding: 2px;">35.8 dpm/100cm²</td> </tr> <tr> <td style="padding: 2px;">Standard Deviation:</td> <td style="padding: 2px;">21.3</td> </tr> <tr> <td style="padding: 2px;">QC Maximum:</td> <td style="padding: 2px;">72.1 dpm/100cm²</td> </tr> <tr> <td style="padding: 2px;">QC Minimum:</td> <td style="padding: 2px;">67.6 dpm/100cm²</td> </tr> <tr> <td style="padding: 2px;">QC Mean:</td> <td style="padding: 2px;">69.8 dpm/100cm²</td> </tr> <tr> <td style="padding: 2px;">Transuranic DCGL_w:</td> <td style="padding: 2px;">100.0 dpm/100cm²</td> </tr> <tr> <td style="padding: 2px;">Transuranic DCGL_{EMC}:</td> <td style="padding: 2px;">300.0 dpm/100cm²</td> </tr> </table>			Alpha		Maximum:	81.8 dpm/100cm ²	Minimum:	-2.3 dpm/100cm ²	Mean:	35.8 dpm/100cm ²	Standard Deviation:	21.3	QC Maximum:	72.1 dpm/100cm ²	QC Minimum:	67.6 dpm/100cm ²	QC Mean:	69.8 dpm/100cm ²	Transuranic DCGL _w :	100.0 dpm/100cm ²	Transuranic DCGL _{EMC} :	300.0 dpm/100cm ²
Alpha																						
Maximum:	81.8 dpm/100cm ²																					
Minimum:	-2.3 dpm/100cm ²																					
Mean:	35.8 dpm/100cm ²																					
Standard Deviation:	21.3																					
QC Maximum:	72.1 dpm/100cm ²																					
QC Minimum:	67.6 dpm/100cm ²																					
QC Mean:	69.8 dpm/100cm ²																					
Transuranic DCGL _w :	100.0 dpm/100cm ²																					
Transuranic DCGL _{EMC} :	300.0 dpm/100cm ²																					
Removable Surface Activity Measurements																						
Nbr Random Measurements Required: 20	Nbr Biased Measurements Required: 0																					
Nbr Random Measurements Performed: 20	Nbr Biased Measurements Performed: 0																					
<table border="1" style="margin: auto; padding: 10px;"> <tr> <td colspan="2" style="text-align: center;">Alpha</td> </tr> <tr> <td style="padding: 2px;">Maximum:</td> <td style="padding: 2px;">0.9 dpm/100cm²</td> </tr> <tr> <td style="padding: 2px;">Minimum:</td> <td style="padding: 2px;">-0.6 dpm/100cm²</td> </tr> <tr> <td style="padding: 2px;">Mean:</td> <td style="padding: 2px;">-0.2 dpm/100cm²</td> </tr> <tr> <td style="padding: 2px;">Standard Deviation:</td> <td style="padding: 2px;">0.7</td> </tr> <tr> <td style="padding: 2px;">Transuranic DCGL_w:</td> <td style="padding: 2px;">20.0 dpm/100cm²</td> </tr> </table>			Alpha		Maximum:	0.9 dpm/100cm ²	Minimum:	-0.6 dpm/100cm ²	Mean:	-0.2 dpm/100cm ²	Standard Deviation:	0.7	Transuranic DCGL _w :	20.0 dpm/100cm ²								
Alpha																						
Maximum:	0.9 dpm/100cm ²																					
Minimum:	-0.6 dpm/100cm ²																					
Mean:	-0.2 dpm/100cm ²																					
Standard Deviation:	0.7																					
Transuranic DCGL _w :	20.0 dpm/100cm ²																					
Media Sample Results																						
Nbr Random Required: 0	Nbr Biased Required: 0																					
Nbr Random Collected: 0	Nbr Biased Collected: 0																					
<p><i>Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.</i></p>																						

Survey Area: M**Survey Unit:** 881M01**Building:** 881**Description:** Building 881, Management Unit M, Room 17 Floor

Instrument Data Sheet

Inst/RCT Number	RCT ID	Analysis Date	Instr Model	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency		A-Priori MDA (dpm/100cm ²)		Survey Type
							Alpha	Beta	Alpha	Beta	
1	711447	05/19/04	Electra	657	DP-8	06/29/04	0.187	NA	48.0	NA	S
2	702567	05/19/04	Electra	658	DP-8	06/04/04	0.168	NA	48.0	NA	S
3	711447	05/19/04	Electra	2404	DP-8	10/08/04	0.162	NA	48.0	NA	S
4	702567	05/19/04	Electra	663	DP-6	09/18/04	0.218	NA	48.0	NA	S
5	711447	05/21/04	Electra	1260	DP-8	11/20/04	0.225	NA	48.0	NA	S
6	702567	05/21/04	Electra	3109	DP-6	06/08/04	0.217	NA	48.0	NA	S
7	711449	05/22/04	SAC-4	1170	NA	11/12/04	0.330	NA	10.0	NA	R
10	712193	05/29/03	Electra	2394	DP-6	08/19/04	0.214	NA	48.0	NA	T
11	702575	05/29/04	Electra	667	DP-6	10/07/04	0.222	NA	48.0	NA	Q

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

Survey Area: M

Survey Unit: 881M01

Building: 881

Description: Building 881, Management Unit M, Room 17 Floor

Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
881M01PRP-N001	7	0.9	N/A	
881M01PRP-N002	7	-0.6	N/A	
881M01PRP-N003	7	0.9	N/A	
881M01PRP-N004	7	-0.6	N/A	
881M01PRP-N005	7	-0.6	N/A	
881M01PRP-N006	7	-0.6	N/A	
881M01PRP-N007	7	-0.6	N/A	
881M01PRP-N008	7	0.9	N/A	
881M01PRP-N009	7	-0.6	N/A	
881M01PRP-N010	7	-0.6	N/A	
881M01PRP-N011	7	-0.6	N/A	
881M01PRP-N012	7	-0.6	N/A	
881M01PRP-N013	7	0.9	N/A	
881M01PRP-N014	7	-0.6	N/A	
881M01PRP-N015	7	-0.6	N/A	
881M01PRP-N016	7	-0.6	N/A	
881M01PRP-N017	7	0.9	N/A	
881M01PRP-N018	7	0.9	N/A	
881M01PRP-N019	7	-0.6	N/A	
881M01PRP-N020	7	-0.6	N/A	

Comments:

Survey Area: M**Survey Unit:** 881M01**Building:** 881**Description:** Building 881, Management Unit M, Room 17 Floor**Random/QC Total Surface Activity Data Sheet**

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
881M01PRP-N001	10	27.6	N/A	
881M01PRP-N002	10	38.3	N/A	
881M01PRP-N003	10	39.7	N/A	
881M01PRP-N004	10	36.9	N/A	
881M01PRP-N005	10	46.3	N/A	
881M01PRP-N006	10	32.3	N/A	
881M01PRP-N007	10	27.6	N/A	
881M01PRP-N008	10	67.8	N/A	
881M01QRP-N008	11	67.6	N/A	
881M01PRP-N009	10	25.7	N/A	
881M01PRP-N010	10	15.0	N/A	
881M01PRP-N011	10	13.6	N/A	
881M01PRP-N012	10	61.7	N/A	
881M01PRP-N013	10	16.4	N/A	
881M01PRP-N014	10	10.3	N/A	
881M01PRP-N015	10	-2.3	N/A	
881M01PRP-N016	10	47.7	N/A	
881M01PRP-N017	10	81.8	N/A	
881M01QRP-N017	11	72.1	N/A	
881M01PRP-N018	10	65.0	N/A	
881M01PRP-N019	10	29.0	N/A	
881M01PRP-N020	10	35.1	N/A	

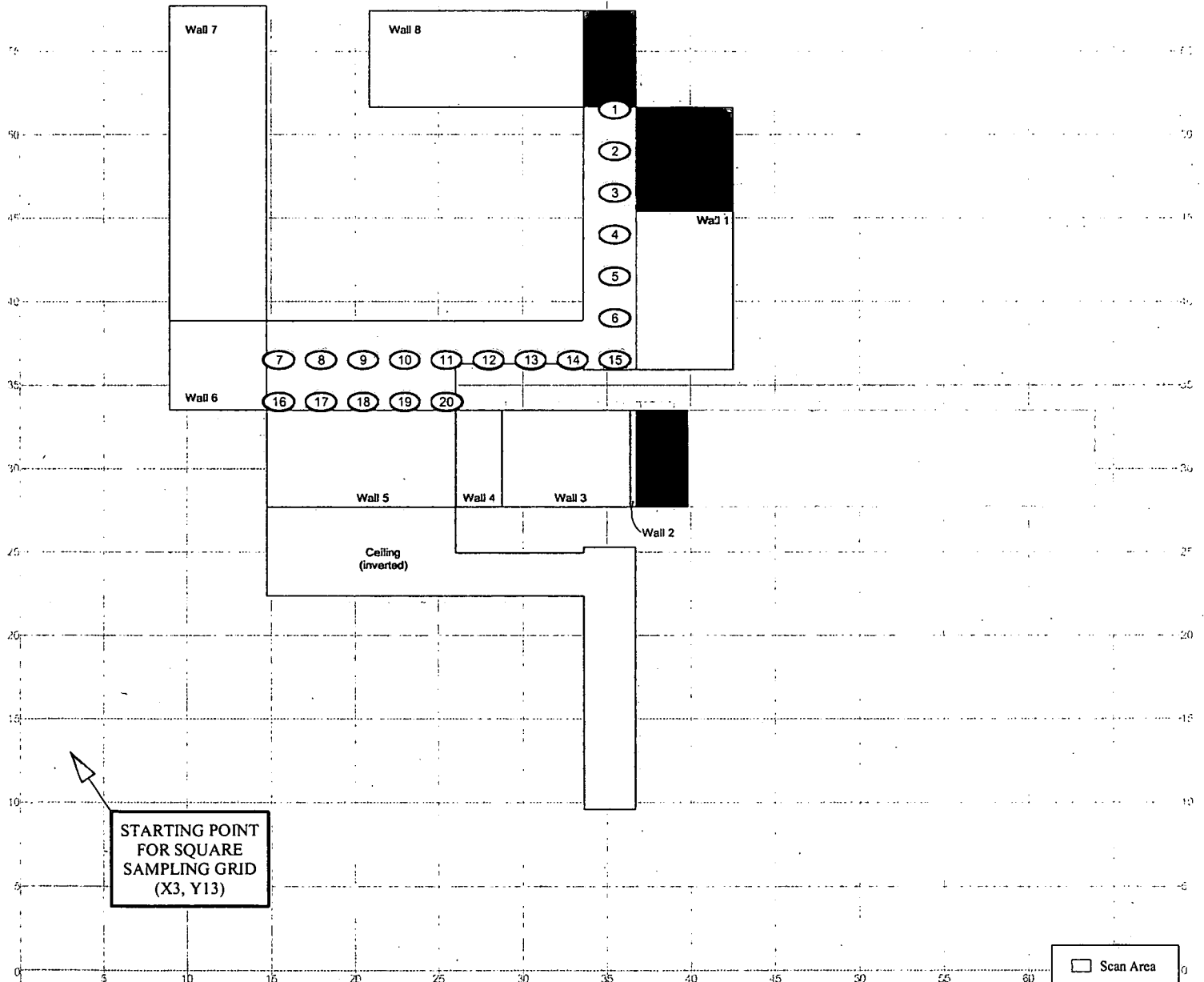
Comments:

PRE-DEMOLITION SURVEY FOR B881

Survey Area: M Survey Unit: 881M01 Classification: 1
 Building: 881
 Survey Unit Description: Building 881 Management Unit M, Room 17, Floor
 Total Area: 129 sq. m. Total Floor Area: 129 sq. m.
 Grid Spacing for Survey Points: 2.5 m. X 2.5 m.

PAGE 1 OF 1

Room 17



STARTING POINT
FOR SQUARE
SAMPLING GRID
(X3, Y13)

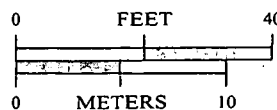
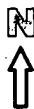
SURVEY MAP LEGEND

- ① Smear & TSA Location
- ② Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

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Scan Survey Information

Survey Instrument ID #(s) & RCT ID #(s):
1 - 6



1 inch = 30 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

Prepared for:



CH2MHILL
Communications Group



MAP ID: 03-0568/881M01-SC

June 01, 2004

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Survey Area: M**Survey Unit:** 881M02**Building:** 881**Description:** Building 881, Management Unit M, Room 17 Walls and Ceiling

Rocky Flats Environmental Technology Site Final Radiological Survey Summary Results

Total Surface Activity Measurements

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 0

Nbr QC Required: 2

Nbr Random Measurements Performed: 16

Nbr Biased Measurements Performed: 0

Nbr QC Performed: 2

Alpha

Maximum: 48.4 dpm/100cm²Minimum: -0.9 dpm/100cm²Mean: 25.9 dpm/100cm²

Standard Deviation: 16.8

QC Maximum: 42.5 dpm/100cm²QC Minimum: 37.7 dpm/100cm²QC Mean: 40.1 dpm/100cm²Uranium DCGL_W: 5,000.0 dpm/100cm²Uranium DCGL_{EMC}: 15,000.0 dpm/100cm²

Removable Surface Activity Measurements

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 16

Nbr Biased Measurements Performed: 0

Alpha

Maximum: 1.5 dpm/100cm²Minimum: -1.5 dpm/100cm²Mean: -0.9 dpm/100cm²

Standard Deviation: 1.0

Uranium DCGL_W: 1,000.0

Media Sample Results

Nbr Random Required: 0

Nbr Biased Required: 0

Nbr Random Collected: 0

Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

Survey Area: M**Survey Unit:** 881M02**Building:** 881**Description:** Building 881, Management Unit M, Room 17 Walls and Ceiling

Instrument Data Sheet

Inst/RCT Number	RCT ID	Analysis Date	Instr Model	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency		A-Priori MDA (dpm/100cm ²)		Survey Type
							Alpha	Beta	Alpha	Beta	
1	702567	05/23/04	Electra	658	DP-8	06/04/04	0.168	NA	93.0	NA	S
2	711449	05/23/04	Electra	1366	DP-6	10/14/04	0.203	NA	93.0	NA	T
3	711449	05/23/04	SAC-4	1170	NA	10/30/04	0.330	NA	16.0	NA	R
4	712193	05/23/04	Electra	1681	DP-6	10/07/04	0.212	NA	93.0	NA	Q

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

Survey Area: M**Survey Unit:** 881M02**Building:** 881**Description:** Building 881, Management Unit M, Room 17 Walls and Ceiling

Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
881M02PRP-N001	3	-0.0	N/A	
881M02PRP-N002	3	-1.5	N/A	
881M02PRP-N003	3	-0.0	N/A	
881M02PRP-N004	3	-1.5	N/A	
881M02PRP-N005	3	-1.5	N/A	
881M02PRP-N006	3	-0.0	N/A	
881M02PRP-N007	3	-1.5	N/A	
881M02PRP-N008	3	-1.5	N/A	
881M02PRP-N009	3	-0.0	N/A	
881M02PRP-N010	3	1.5	N/A	
881M02PRP-N011	3	-1.5	N/A	
881M02PRP-N012	3	-1.5	N/A	
881M02PRP-N013	3	-1.5	N/A	
881M02PRP-N014	3	-0.0	N/A	
881M02PRP-N015	3	-1.5	N/A	
881M02PRP-N016	3	-1.5	N/A	

Comments:

Survey Area: M**Survey Unit:** 881M02**Building:** 881**Description:** Building 881, Management Unit M, Room 17 Walls and Ceiling**Random/QC Total Surface Activity Data Sheet**

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
881M02PRP-N001	2	43.4	N/A	
881M02QRP-N001	4	37.7	N/A	
881M02PRP-N002	2	43.4	N/A	
881M02PRP-N003	2	4.0	N/A	
881M02PRP-N004	2	48.4	N/A	
881M02PRP-N005	2	33.6	N/A	
881M02PRP-N006	2	33.6	N/A	
881M02PRP-N007	2	4.0	N/A	
881M02PRP-N008	2	13.9	N/A	
881M02PRP-N009	2	33.6	N/A	
881M02QRP-N009	4	42.5	N/A	
881M02PRP-N010	2	23.7	N/A	
881M02PRP-N011	2	28.7	N/A	
881M02PRP-N012	2	4.0	N/A	
881M02PRP-N013	2	33.6	N/A	
881M02PRP-N014	2	48.4	N/A	
881M02PRP-N015	2	-0.9	N/A	
881M02PRP-N016	2	18.8	N/A	

Comments:

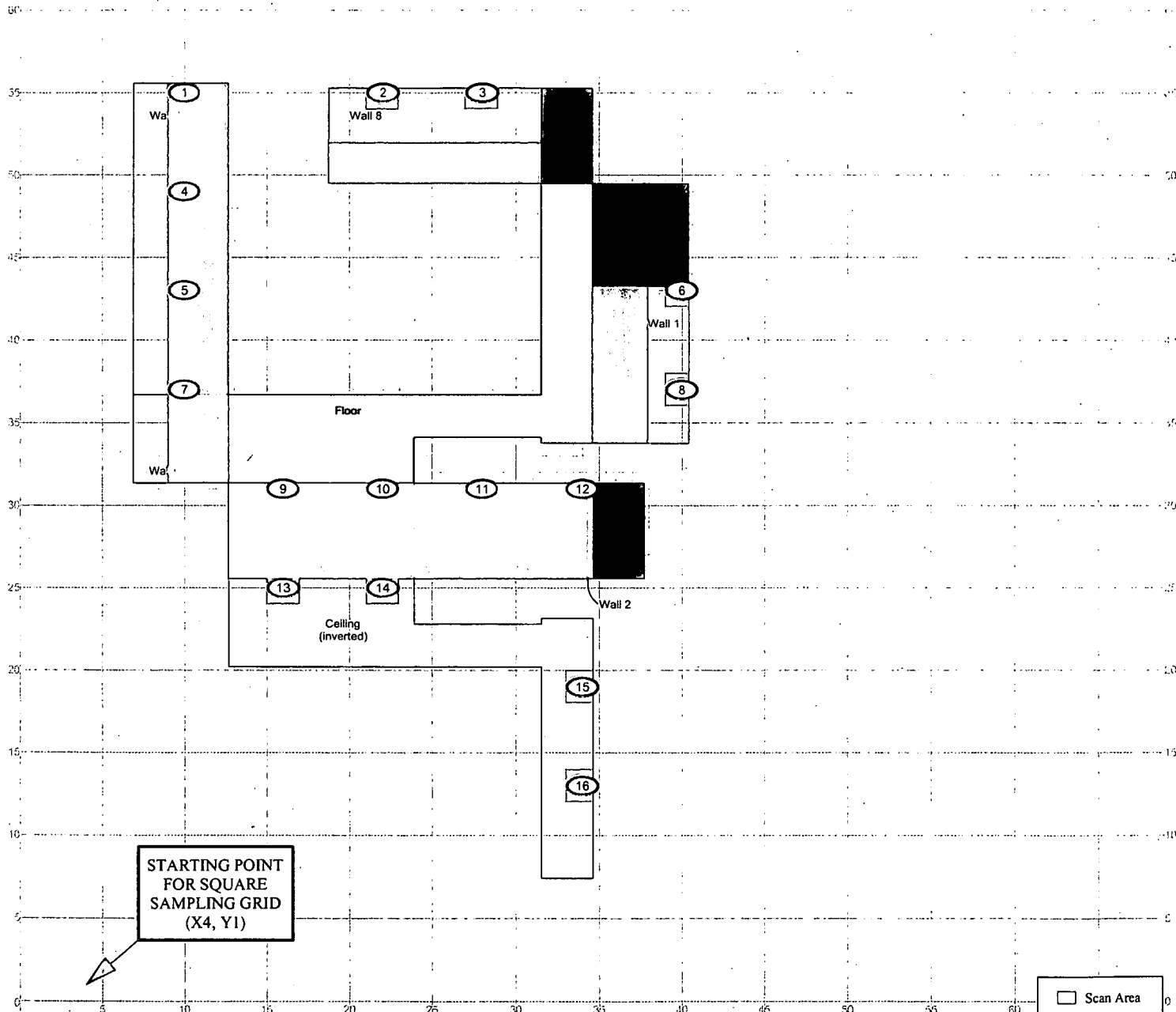
60

PRE-DEMOLITION SURVEY FOR B881

Survey Area: M Survey Unit: 881M02 Classification: 2
 Building: 881
 Survey Unit Description: Building 881 Management Unit M, Room 17,
 Walls & Ceiling
 Total Area: 511 sq. m. Total Floor Area: 129 sq. m.
 Grid Spacing for Survey Points: 6 m. X 6 m.

PAGE 1 OF 1

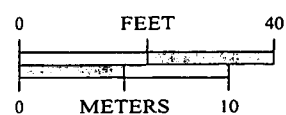
Room 17



SURVEY MAP LEGEND

- ① Smear & TSA Location
- ② Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

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Scan Survey Information
 Survey Instrument ID #(s) & RCT ID #(s):
 1

1 inch = 30 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy
 Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-968-7707

Prepared for:



CH2MHILL
 Communications Group



MAP ID: 03-0568/881M02-SC

May 27, 2004

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Survey Area: M**Survey Unit:** 881M03**Building:** 881**Description:** Building 881, Management Unit M, Rooms 11, 12, 15, 16 & 19 Floors.

Rocky Flats Environmental Technology Site Final Radiological Survey Summary Results

Total Surface Activity Measurements

Nbr Random Measurements Required: 106

Nbr Biased Measurements Required: 0

Nbr QC Required: 6

Nbr Random Measurements Performed: 121

Nbr Biased Measurements Performed: 0

Nbr QC Performed: 7

Alpha

Maximum: 362.0 dpm/100cm²Minimum: -14.0 dpm/100cm²Mean: 28.6 dpm/100cm²

Standard Deviation: 38.0

QC Maximum: 392.6 dpm/100cm²QC Minimum: 46.2 dpm/100cm²QC Mean: 122.3 dpm/100cm²Uranium DCGL_W: 5,000.0 dpm/100cm²Uranium DCGL_{EMC}: 15,000.0 dpm/100cm²

Removable Surface Activity Measurements

Nbr Random Measurements Required: 106

Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 121

Nbr Biased Measurements Performed: 0

Alpha

Maximum: 102.1 dpm/100cm²Minimum: -0.9 dpm/100cm²Mean: 1.3 dpm/100cm²

Standard Deviation: 9.4

Uranium DCGL_W: 1,000.0

Media Sample Results

Nbr Random Required: 0

Nbr Biased Required: 0

Nbr Random Collected: 0

Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

Survey Area: M

Survey Unit: 881M03

Building: 881

Description: Building 881, Management Unit M, Rooms 11, 12, 15, 16 & 19 Floors

Instrument Data Sheet

Inst/RCT Number	RCT ID	Analysis Date	Instr Model	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency		A-Priori MDA (dpm/100cm ²)		Survey Type
							Alpha	Beta	Alpha	Beta	
1	711449	05/21/04	Electra	1241	DP-8	10/06/04	0.193	NA	93.0	NA	S
2	711451	05/21/04	Electra	2403	DP-6	10/19/04	0.218	NA	93.0	NA	T
3	711447	05/21/04	Electra	658	DP-8	06/04/04	0.168	NA	93.0	NA	S
4	711451	05/21/04	Electra	2404	DP-8	10/08/04	0.162	NA	93.0	NA	S
5	711447	05/22/04	Electra	658	DP-8	06/04/04	0.168	NA	93.0	NA	S
6	711449	05/22/04	Electra	3131	DP-6	10/19/04	0.218	NA	93.0	NA	T
7	711449	05/22/04	SAC-4	1170	NA	11/12/04	0.330	NA	16.0	10.0	R
8	712193	05/23/04	Electra	1681	DP-6	10/07/04	0.212	NA	93.0	NA	Q
9	903346	05/30/04	Electra	1681	DP-6	10/07/04	0.212	NA	93.0	NA	T
10	903346	05/30/04	SAC-4	830	NA	10/30/04	0.330	NA	16.0	10.0	R
11	702575	05/30/04	Electra	1672	DP-6	10/22/04	0.215	NA	93.0	NA	T
12	711447	05/30/04	Electra	1366	DP-6	10/14/04	0.203	NA	93.0	NA	T
13	903346	05/31/04	SAC-4	830	NA	10/30/04	0.330	NA	16.0	10.0	R
14	702575	05/31/04	Electra	1681	DP-6	10/07/04	0.212	NA	93.0	NA	T
15	702567	05/31/04	Electra	2404	DP-8	10/08/04	0.162	NA	93.0	NA	S
16	711447	05/31/04	Electra	681	DP-8	06/29/04	0.151	NA	93.0	NA	S
17	712193	05/31/04	Electra	1241	AP-6	10/06/04	0.193	NA	93.0	NA	S
18	712193	05/31/04	Electra	1366	DP-6	10/14/04	0.203	NA	93.0	NA	Q

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

Survey Area: M

Survey Unit: 881M03

Building: 881

Description: Building 881, Management Unit M, Rooms 11, 12, 15, 16 & 19 Floors

Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr.	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
881M03PRP-N001	10	2.7	N/A	
881M03PRP-N002	10	-0.3	N/A	
881M03PRP-N003	10	-0.3	N/A	
881M03PRP-N004	10	2.7	N/A	
881M03PRP-N005	10	-0.3	N/A	
881M03PRP-N006	10	-0.3	N/A	
881M03PRP-N007	10	2.7	N/A	
881M03PRP-N008	10	2.7	N/A	
881M03PRP-N009	10	-0.3	N/A	
881M03PRP-N010	10	-0.3	N/A	
881M03PRP-N011	10	2.7	N/A	
881M03PRP-N012	10	-0.3	N/A	
881M03PRP-N013	13	-0.9	N/A	
881M03PRP-N014	13	2.1	N/A	
881M03PRP-N015	13	-0.9	N/A	
881M03PRP-N016	13	-0.9	N/A	
881M03PRP-N017	13	-0.9	N/A	
881M03PRP-N018	13	-0.9	N/A	
881M03PRP-N019	13	-0.9	N/A	
881M03PRP-N020	13	-0.9	N/A	
881M03PRP-N021	13	-0.9	N/A	
881M03PRP-N022	13	2.1	N/A	
881M03PRP-N023	10	2.7	N/A	
881M03PRP-N024	10	2.7	N/A	
881M03PRP-N025	10	2.7	N/A	
881M03PRP-N026	10	-0.3	N/A	
881M03PRP-N027	10	-0.3	N/A	
881M03PRP-N028	10	2.7	N/A	
881M03PRP-N029	10	-0.3	N/A	

Survey Area: M

Survey Unit: 881M03

Building: 881

Description: Building 881, Management Unit M, Rooms 11, 12, 15, 16 & 19 Floors

Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
881M03PRP-N030	10	-0.3	N/A	
881M03PRP-N031	10	-0.3	N/A	
881M03PRP-N032	10	-0.3	N/A	
881M03PRP-N033	10	2.7	N/A	
881M03PRP-N034	13	2.1	N/A	
881M03PRP-N035	13	-0.9	N/A	
881M03PRP-N036	13	-0.9	N/A	
881M03PRP-N037	13	-0.9	N/A	
881M03PRP-N038	13	-0.9	N/A	
881M03PRP-N039	13	-0.9	N/A	
881M03PRP-N040	13	2.1	N/A	
881M03PRP-N041	13	102.1	N/A	
881M03PRP-N042	13	-0.9	N/A	
881M03PRP-N043	13	2.1	N/A	
881M03PRP-N044	13	-0.9	N/A	
881M03PRP-N045	13	-0.9	N/A	
881M03PRP-N046	13	-0.9	N/A	
881M03PRP-N047	13	-0.9	N/A	
881M03PRP-N048	13	-0.9	N/A	
881M03PRP-N049	13	-0.9	N/A	
881M03PRP-N050	13	2.1	N/A	
881M03PRP-N051	13	-0.9	N/A	
881M03PRP-N052	13	-0.9	N/A	
881M03PRP-N053	13	-0.9	N/A	
881M03PRP-N054	13	-0.9	N/A	
881M03PRP-N055	13	-0.9	N/A	
881M03PRP-N056	13	-0.9	N/A	
881M03PRP-N057	13	2.1	N/A	
881M03PRP-N058	13	-0.9	N/A	

Survey Area: M**Survey Unit: 881M03****Building: 881****Description:** Building 881, Management Unit M, Rooms 11, 12, 15, 16 & 19 Floors**Random Removable Surface Activity Data Sheet**

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
881M03PRP-N059	13	2.1	N/A	
881M03PRP-N060	13	-0.9	N/A	
881M03PRP-N061	7	5.5	N/A	
881M03PRP-N062	7	2.4	N/A	
881M03PRP-N063	7	-0.6	N/A	
881M03PRP-N064	7	-0.6	N/A	
881M03PRP-N065	7	-0.6	N/A	
881M03PRP-N066	7	-0.6	N/A	
881M03PRP-N067	7	-0.6	N/A	
881M03PRP-N068	7	-0.6	N/A	
881M03PRP-N069	7	2.4	N/A	
881M03PRP-N070	7	5.5	N/A	
881M03PRP-N071	7	-0.6	N/A	
881M03PRP-N072	7	2.4	N/A	
881M03PRP-N073	7	2.4	N/A	
881M03PRP-N074	7	-0.6	N/A	
881M03PRP-N075	7	-0.6	N/A	
881M03PRP-N076	7	-0.6	N/A	
881M03PRP-N077	7	-0.6	N/A	
881M03PRP-N078	7	8.5	N/A	
881M03PRP-N079	7	2.4	N/A	
881M03PRP-N080	7	-0.6	N/A	
881M03PRP-N081	7	2.4	N/A	
881M03PRP-N082	7	-0.6	N/A	
881M03PRP-N083	7	-0.6	N/A	
881M03PRP-N084	7	5.5	N/A	
881M03PRP-N085	7	-0.6	N/A	
881M03PRP-N086	7	2.4	N/A	
881M03PRP-N087	7	-0.6	N/A	

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Survey Area: M**Survey Unit: 881M03****Building: 881****Description:** Building 881, Management Unit M, Rooms 11, 12, 15, 16 & 19 Floors**Random Removable Surface Activity Data Sheet**

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
881M03PRP-N088	7	2.4	N/A	
881M03PRP-N089	7	-0.6	N/A	
881M03PRP-N090	7	-0.6	N/A	
881M03PRP-N091	7	-0.6	N/A	
881M03PRP-N092	7	-0.6	N/A	
881M03PRP-N093	7	-0.6	N/A	
881M03PRP-N094	7	-0.6	N/A	
881M03PRP-N095	7	-0.6	N/A	
881M03PRP-N096	7	-0.6	N/A	
881M03PRP-N097	7	-0.6	N/A	
881M03PRP-N098	7	-0.6	N/A	
881M03PRP-N099	7	-0.6	N/A	
881M03PRP-N100	7	-0.6	N/A	
881M03PRP-N101	7	-0.6	N/A	
881M03PRP-N102	7	-0.6	N/A	
881M03PRP-N103	7	2.4	N/A	
881M03PRP-N104	7	-0.6	N/A	
881M03PRP-N105	7	-0.6	N/A	
881M03PRP-N106	7	-0.6	N/A	
881M03PRP-N107	7	-0.6	N/A	
881M03PRP-N108	7	-0.6	N/A	
881M03PRP-N109	7	2.4	N/A	
881M03PRP-N110	7	-0.6	N/A	
881M03PRP-N111	7	-0.6	N/A	
881M03PRP-N112	7	2.4	N/A	
881M03PRP-N113	7	8.5	N/A	
881M03PRP-N114	7	-0.6	N/A	
881M03PRP-N115	7	-0.6	N/A	
881M03PRP-N116	7	2.4	N/A	

Survey Area: M**Survey Unit:** 881M03**Building:** 881**Description:** Building 881, Management Unit M, Rooms 11, 12, 15, 16 & 19 Floors

Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
881M03PRP-N117	7	-0.6	N/A	
881M03PRP-N118	7	2.4	N/A	
881M03PRP-N119	7	-0.6	N/A	
881M03PRP-N120	7	2.4	N/A	
881M03PRP-N121	7	-0.6	N/A	

Comments:

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Survey Area: M**Survey Unit: 881M03****Building: 881****Description:** Building 881, Management Unit M, Rooms 11, 12, 15, 16 & 19 Floors**Random/QC Total Surface Activity Data Sheet**

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
881M03PRP-N001	9	28.5	N/A	
881M03PRP-N002	9	37.9	N/A	
881M03PRP-N003	9	28.5	N/A	
881M03PRP-N004	9	4.9	N/A	
881M03PRP-N005	11	-0.1	N/A	
881M03PRP-N006	11	4.6	N/A	
881M03PRP-N007	11	-4.7	N/A	
881M03PRP-N008	11	-0.1	N/A	
881M03PRP-N009	11	-9.4	N/A	
881M03PRP-N010	11	27.8	N/A	
881M03PRP-N011	11	27.8	N/A	
881M03PRP-N012	11	-4.7	N/A	
881M03PRP-N013	11	-0.1	N/A	
881M03PRP-N014	11	32.5	N/A	
881M03PRP-N015	11	46.4	N/A	
881M03PRP-N016	11	23.2	N/A	
881M03PRP-N017	11	46.4	N/A	
881M03QRP-N017	18	56.1	N/A	
881M03PRP-N018	11	13.9	N/A	
881M03PRP-N019	11	-14.0	N/A	
881M03PRP-N020	11	-0.1	N/A	
881M03PRP-N021	11	27.8	N/A	
881M03PRP-N022	11	9.2	N/A	
881M03PRP-N023	9	9.6	N/A	
881M03PRP-N024	9	47.3	N/A	
881M03QRP-N024	18	51.2	N/A	
881M03PRP-N025	9	42.6	N/A	

Survey Area: M**Survey Unit: 881M03****Building: 881****Description: Building 881, Management Unit M, Rooms 11, 12, 15, 16 & 19 Floors****Random/QC Total Surface Activity Data Sheet**

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
881M03PRP-N026	12	-13.8	N/A	
881M03PRP-N027	12	5.9	N/A	
881M03PRP-N028	12	10.9	N/A	
881M03PRP-N029	12	25.6	N/A	
881M03PRP-N030	12	5.9	N/A	
881M03PRP-N031	12	25.6	N/A	
881M03PRP-N032	12	30.6	N/A	
881M03PRP-N033	12	10.9	N/A	
881M03PRP-N034	12	30.6	N/A	
881M03PRP-N035	12	20.7	N/A	
881M03PRP-N036	12	5.9	N/A	
881M03PRP-N037	12	10.9	N/A	
881M03PRP-N038	12	1.0	N/A	
881M03PRP-N039	14	9.6	N/A	
881M03PRP-N040	14	19.0	N/A	
881M03PRP-N041	14	4.9	N/A	
881M03PRP-N042	14	61.5	N/A	
881M03PRP-N043	14	70.9	N/A	
881M03PRP-N044	14	-4.5	N/A	
881M03PRP-N045	14	0.2	N/A	
881M03PRP-N046	14	42.6	N/A	
881M03PRP-N047	14	4.9	N/A	
881M03PRP-N048	14	9.6	N/A	
881M03PRP-N049	14	23.8	N/A	
881M03PRP-N050	14	33.2	N/A	
881M03PRP-N051	14	19.0	N/A	
881M03PRP-N052	14	23.8	N/A	

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Survey Area: M**Survey Unit:** 881M03**Building:** 881**Description:** Building 881, Management Unit M, Rooms 11, 12, 15, 16 & 19 Floors**Random/QC Total Surface Activity Data Sheet**

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
881M03PRP-N053	14	23.8	N/A	
881M03PRP-N054	14	4.9	N/A	
881M03PRP-N055	14	-9.3	N/A	
881M03PRP-N056	14	14.3	N/A	
881M03PRP-N057	14	28.5	N/A	
881M03PRP-N058	14	33.2	N/A	
881M03QRP-N058	18	46.2	N/A	
881M03PRP-N059	14	19.0	N/A	
881M03PRP-N060	14	-4.5	N/A	
881M03PRP-N061	2	4.2	N/A	
881M03PRP-N062	6	27.2	N/A	
881M03PRP-N063	2	13.4	N/A	
881M03PRP-N064	6	40.9	N/A	
881M03PRP-N065	2	22.6	N/A	
881M03PRP-N066	6	18.0	N/A	
881M03PRP-N067	6	40.9	N/A	
881M03PRP-N068	2	27.2	N/A	
881M03PRP-N069	6	8.8	N/A	
881M03PRP-N070	2	54.7	N/A	
881M03PRP-N071	2	18.0	N/A	
881M03PRP-N072	6	36.3	N/A	
881M03PRP-N073	2	31.8	N/A	
881M03PRP-N074	6	27.2	N/A	
881M03PRP-N075	2	13.4	N/A	
881M03PRP-N076	6	50.1	N/A	
881M03PRP-N077	2	54.7	N/A	
881M03PRP-N078	2	36.3	N/A	

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Survey Area: M**Survey Unit: 881M03****Building: 881****Description: Building 881, Management Unit M, Rooms 11, 12, 15, 16 & 19 Floors****Random/QC Total Surface Activity Data Sheet**

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
881M03PRP-N079	6	40.9	N/A	
881M03PRP-N080	6	45.5	N/A	
881M03PRP-N081	2	13.4	N/A	
881M03PRP-N082	6	18.0	N/A	
881M03PRP-N083	6	27.2	N/A	
881M03PRP-N084	2	96.0	N/A	
881M03QRP-N084	8	123.7	N/A	
881M03PRP-N085	2	77.6	N/A	
881M03PRP-N086	6	18.0	N/A	
881M03PRP-N087	2	31.8	N/A	
881M03PRP-N088	2	18.0	N/A	
881M03PRP-N089	6	36.3	N/A	
881M03PRP-N090	2	27.2	N/A	
881M03PRP-N091	2	31.8	N/A	
881M03PRP-N092	6	18.0	N/A	
881M03PRP-N093	2	13.4	N/A	
881M03PRP-N094	6	13.4	N/A	
881M03PRP-N095	2	22.6	N/A	
881M03PRP-N096	6	68.5	N/A	
881M03PRP-N097	6	18.0	N/A	
881M03PRP-N098	2	36.3	N/A	
881M03PRP-N099	6	27.2	N/A	
881M03PRP-N100	2	54.7	N/A	
881M03PRP-N101	6	27.2	N/A	
881M03PRP-N102	2	96.0	N/A	
881M03QRP-N102	8	71.8	N/A	
881M03PRP-N103	6	362.0	N/A	

Survey Area: M**Survey Unit:** 881M03**Building:** 881**Description:** Building 881, Management Unit M, Rooms 11, 12, 15, 16 & 19 Floors**Random/QC Total Surface Activity Data Sheet**

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
881M03QRP-N103	8	392.6	N/A	
881M03PRP-N104	2	40.9	N/A	
881M03PRP-N105	6	27.2	N/A	
881M03PRP-N106	2	27.2	N/A	
881M03PRP-N107	6	18.0	N/A	
881M03PRP-N108	2	50.1	N/A	
881M03PRP-N109	6	27.2	N/A	
881M03PRP-N110	2	36.3	N/A	
881M03PRP-N111	6	22.6	N/A	
881M03PRP-N112	2	45.5	N/A	
881M03PRP-N113	6	45.5	N/A	
881M03PRP-N114	6	27.2	N/A	
881M03PRP-N115	2	-4.9	N/A	
881M03PRP-N116	6	-4.9	N/A	
881M03PRP-N117	2	40.9	N/A	
881M03PRP-N118	6	128.1	N/A	
881M03QRP-N118	8	114.3	N/A	
881M03PRP-N119	2	50.1	N/A	
881M03PRP-N120	6	40.9	N/A	
881M03PRP-N121	2	50.1	N/A	

Comments:

Survey Area: M**Survey Unit:** 881M04**Building:** 881**Description:** Building 881, Management Unit M, Rooms 11, 12, 15, 16 & 19 Walls and Ceiling

Rocky Flats Environmental Technology Site Final Radiological Survey Summary Results

Total Surface Activity Measurements

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 0

Nbr QC Required: 2

Nbr Random Measurements Performed: 20

Nbr Biased Measurements Performed: 0

Nbr QC Performed: 2

Alpha

Maximum: 62.4 dpm/100cm²Minimum: -7.7 dpm/100cm²Mean: 20.3 dpm/100cm²

Standard Deviation: 19.6

QC Maximum: 49.6 dpm/100cm²QC Minimum: 21.3 dpm/100cm²QC Mean: 35.4 dpm/100cm²Uranium DCGL_W: 5,000.0 dpm/100cm²Uranium DCGL_{EMC}: 15,000.0 dpm/100cm²

Removable Surface Activity Measurements

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 20

Nbr Biased Measurements Performed: 0

Alpha

Maximum: 4.5 dpm/100cm²Minimum: -1.5 dpm/100cm²Mean: -0.5 dpm/100cm²

Standard Deviation: 1.8

Uranium DCGL_W: 1,000.0

Media Sample Results

Nbr Random Required: 0

Nbr Biased Required: 0

Nbr Random Collected: 0

Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

Survey Area: M**Survey Unit: 881M04****Building: 881****Description:** Building 881, Management Unit M, Rooms 11, 12, 15, 16 & 19 Walls and Ceiling

Instrument Data Sheet

Inst/RCT Number	RCT ID	Analysis Date	Instr Model	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency		A-Priori MDA (dpm/100cm ²)		Survey Type
							Alpha	Beta	Alpha	Beta	
1	711447	05/20/04	Electra	657	DP-8	06/29/04	0.187	NA	93.0	NA	S
2	711449	05/23/04	Electra	1366	DP-6	10/14/04	0.203	NA	93.0	NA	T
3	711449	05/23/04	SAC-4	830	NA	10/30/04	0.330	NA	16.0	NA	R
4	712193	05/23/04	Electra	1681	DP-6	10/07/04	0.212	NA	93.0	NA	Q
5	903346	05/30/04	Electra	1681	DP-6	10/07/04	0.212	NA	93.0	NA	T
6	711447	05/30/04	Electra	1366	DP-6	10/14/04	0.203	NA	93.0	NA	S
7	702567	05/30/04	Electra	681	DP-8	06/29/04	0.151	NA	93.0	NA	S
8	702575	05/30/04	Electra	2404	DP-8	10/08/04	0.162	NA	93.0	NA	S

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

Survey Area: M**Survey Unit:** 881M04**Building:** 881**Description:** Building 881, Management Unit M, Rooms 11, 12, 15, 16 & 19 Walls and Ceiling**Random Removable Surface Activity Data Sheet**

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
881M04PRP-N001	3	-1.5	N/A	
881M04PRP-N002	3	1.5	N/A	
881M04PRP-N003	3	-1.5	N/A	
881M04PRP-N004	3	1.5	N/A	
881M04PRP-N005	3	-1.5	N/A	
881M04PRP-N006	3	-1.5	N/A	
881M04PRP-N007	3	-1.5	N/A	
881M04PRP-N008	3	1.5	N/A	
881M04PRP-N009	3	-1.5	N/A	
881M04PRP-N010	3	-1.5	N/A	
881M04PRP-N011	3	-1.5	N/A	
881M04PRP-N012	3	1.5	N/A	
881M04PRP-N013	3	-1.5	N/A	
881M04PRP-N014	3	-1.5	N/A	
881M04PRP-N015	3	-1.5	N/A	
881M04PRP-N016	3	4.5	N/A	
881M04PRP-N017	3	-1.5	N/A	
881M04PRP-N018	3	1.5	N/A	
881M04PRP-N019	3	-1.5	N/A	
881M04PRP-N020	3	-1.5	N/A	

Comments:

Survey Area: M**Survey Unit: 881M04****Building: 881****Description:** Building 881, Management Unit M, Rooms 11, 12, 15, 16 & 19 Walls and Ceiling**Random/QC Total Surface Activity Data Sheet**

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
881M04PRP-N001	5	62.4	N/A	
881M04PRP-N002	2	56.3	N/A	
881M04PRP-N003	2	16.9	N/A	
881M04PRP-N004	2	31.7	N/A	
881M04QRP-N004	4	49.6	N/A	
881M04PRP-N005	2	31.7	N/A	
881M04PRP-N006	2	2.1	N/A	
881M04PRP-N007	2	7.1	N/A	
881M04PRP-N008	2	36.6	N/A	
881M04PRP-N009	5	1.1	N/A	
881M04PRP-N010	2	12.0	N/A	
881M04PRP-N011	2	-7.7	N/A	
881M04PRP-N012	2	7.1	N/A	
881M04PRP-N013	2	31.7	N/A	
881M04PRP-N014	5	1.1	N/A	
881M04PRP-N015	2	12.0	N/A	
881M04PRP-N016	2	21.8	N/A	
881M04PRP-N017	2	36.6	N/A	
881M04PRP-N018	2	21.8	N/A	
881M04PRP-N019	2	-7.7	N/A	
881M04PRP-N020	2	31.7	N/A	
881M04QRP-N020	4	21.3	N/A	

Comments: Scans performed at 4"/second at shaded areas indicated on map. All detected alpha count rates verified to be less than 5,000 dpm/100cm².

Survey Area: M**Survey Unit:** 881M07**Building:** 881**Description:** Building 881, Management Unit M, Room 15A, Floor, Walls, and Ceiling

Rocky Flats Environmental Technology Site Final Radiological Survey Summary Results

Total Surface Activity Measurements

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 0

Nbr QC Required: 2

Nbr Random Measurements Performed: 25

Nbr Biased Measurements Performed: 0

Nbr QC Performed: 3

Alpha

Maximum: 794.6 dpm/100cm²Minimum: 71.1 dpm/100cm²Mean: 263.9 dpm/100cm²

Standard Deviation: 180.0

QC Maximum: 780.4 dpm/100cm²QC Minimum: 392.5 dpm/100cm²QC Mean: 591.9 dpm/100cm²Uranium DCGL_w: 5,000.0 dpm/100cm²Uranium DCGL_{EMC}: 15,000.0 dpm/100cm²

Removable Surface Activity Measurements

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 25

Nbr Biased Measurements Performed: 0

Alpha

Maximum: 13.6 dpm/100cm²Minimum: -1.5 dpm/100cm²Mean: 3.2 dpm/100cm²

Standard Deviation: 4.1

Uranium DCGL_w: 1,000.0

Media Sample Results

Nbr Random Required: 0

Nbr Biased Required: 0

Nbr Random Collected: 0

Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

Survey Area: M**Survey Unit:** 881M07**Building:** 881**Description:** Building 881, Management Unit M, Room 15A, Floor, Walls, and Ceiling

Instrument Data Sheet

Inst/RCT Number	RCT ID	Analysis Date	Instr Model	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency		A-Priori MDA (dpm/100cm ²)		Survey Type
							Alpha	Beta	Alpha	Beta	
1	712193	06/05/04	Electra	632	DP-8	07/07/04	0.163	NA	93.0	NA	S
2	712193	06/05/04	SAC-4	830	NA	10/30/04	0.330	NA	16.0	NA	R
3	712467	06/05/04	Electra	632	DP-8	07/07/04	0.163	NA	93.0	NA	S
4	712467	06/05/04	Electra	1518	DP-6	12/02/04	0.217	NA	93.0	NA	T/S
5	712193	06/05/04	Electra	2394	DP-6	08/19/04	0.214	NA	93.0	NA	Q/S

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

Survey Area: M

Survey Unit: 881M07

Building: 881

Description: Building 881, Management Unit M, Room 15A, Floor, Walls, and Ceiling

Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
881M07PRP-N001	2	1.5	N/A	
881M07PRP-N002	2	1.5	N/A	
881M07PRP-N003	2	4.5	N/A	
881M07PRP-N004	2	7.6	N/A	
881M07PRP-N005	2	1.5	N/A	
881M07PRP-N006	2	10.6	N/A	
881M07PRP-N007	2	-1.5	N/A	
881M07PRP-N008	2	1.5	N/A	
881M07PRP-N009	2	13.6	N/A	
881M07PRP-N010	2	1.5	N/A	
881M07PRP-N011	2	-1.5	N/A	
881M07PRP-N012	2	4.5	N/A	
881M07PRP-N013	2	7.6	N/A	
881M07PRP-N014	2	4.5	N/A	
881M07PRP-N015	2	1.5	N/A	
881M07PRP-N016	2	1.5	N/A	
881M07PRP-N017	2	-1.5	N/A	
881M07PRP-N018	2	-1.5	N/A	
881M07PRP-N019	2	10.6	N/A	
881M07PRP-N020	2	4.5	N/A	
881M07PRP-N021	2	-1.5	N/A	
881M07PRP-N022	2	1.5	N/A	
881M07PRP-N023	2	4.5	N/A	
881M07PRP-N024	2	1.5	N/A	
881M07PRP-N025	2	1.5	N/A	

Comments:

Survey Area: M

Survey Unit: 881M07

Building: 881

Description: Building 881, Management Unit M, Room 15A, Floor, Walls, and Ceiling

Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
881M07PRP-N001	4	278.5	N/A	
881M07PRP-N002	4	75.7	N/A	
881M07PRP-N003	4	794.6	N/A	
881M07QRP-N003	5	780.4	N/A	
881M07PRP-N004	4	287.7	N/A	
881M07PRP-N005	4	71.1	N/A	
881M07PRP-N006	4	352.2	N/A	
881M07PRP-N007	4	283.1	N/A	
881M07PRP-N008	4	172.5	N/A	
881M07PRP-N009	4	186.3	N/A	
881M07PRP-N010	4	237.0	N/A	
881M07PRP-N011	4	167.9	N/A	
881M07PRP-N012	4	435.2	N/A	
881M07PRP-N013	4	103.4	N/A	
881M07PRP-N014	4	504.3	N/A	
881M07PRP-N015	4	347.6	N/A	
881M07QRP-N015	5	392.5	N/A	
881M07PRP-N016	4	200.1	N/A	
881M07PRP-N017	4	103.4	N/A	
881M07PRP-N018	4	214.0	N/A	
881M07PRP-N019	4	223.2	N/A	
881M07PRP-N020	4	656.4	N/A	
881M07QRP-N020	5	602.8	N/A	
881M07PRP-N021	4	135.6	N/A	
881M07PRP-N022	4	366.0	N/A	
881M07PRP-N023	4	80.3	N/A	
881M07PRP-N024	4	172.5	N/A	

Survey Area: M

Survey Unit: 881M07

Building: 881

Description: Building 881, Management Unit M, Room 15A, Floor, Walls, and Ceiling

Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm ²)	Net Beta (dpm/100cm ²)	
881M07PRP-N025	4	149.5	N/A	

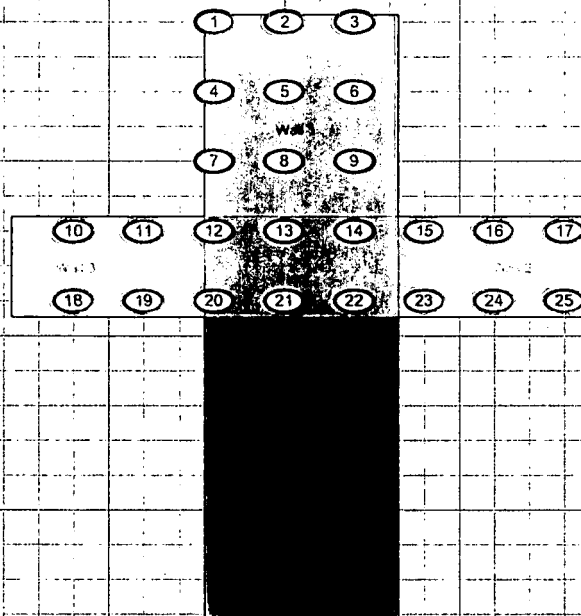
Comments:

PRE-DEMOLITION SURVEY FOR B881

Survey Area: M Survey Unit: 881M07 Classification: 1
 Building: 881
 Survey Unit Description: Building 881 Management Unit M, Room 15A, Floor, Walls & Ceiling
 Total Area: 80 sq. m. Total Floor Area: 16 sq. m.
 Grid Spacing for Survey Points: 2.0 m. X 2.0 m.

PAGE 1 OF 1

Room 15A



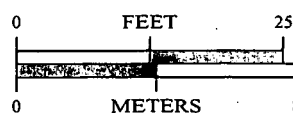
STARTING POINT
FOR SQUARE
SAMPLING GRID
(X4, Y5)

SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

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Scan Survey Information
 Survey Instrument ID #(s) & RCT ID #(s):
 1, 3, 4, 5



1 inch = 18 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy
 Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

Prepared for:



CH2MHILL
 Communications Group



MAP ID: 03-0568/881M07

May 25, 2004

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ATTACHMENT C-1

PDS Beryllium Data Summary and Sample Maps



Table C-1 Beryllium Data Summary

Sample Map Location #	Sample Map Page #	Room	RIN	Sample Number	Sample Location	Result (ug/100 cm2)
1	5 of 5	15	04Z1392	881-03122004-26-001	On concrete floor, random	< 0.1
3	5 of 5	10	04Z1450	881-03192004-313-003	On concrete floor, random	< 0.1
4	5 of 5	15	04Z1392	881-03122004-26-004	On concrete floor, random	< 0.1
5	5 of 5	15	04Z1392	881-03122004-26-005	On concrete floor, random	< 0.1
7	5 of 5	133A	04Z1392	881-03122004-26-007	On concrete floor, random	< 0.1
9	5 of 5	15	04Z1392	881-03122004-26-009	Inside duct, random	< 0.1
10	5 of 5	10	04Z1450	881-03192004-313-010	On concrete floor, random	< 0.1
11	5 of 5	10	04Z1450	881-03192004-313-011	On concrete floor, random	< 0.1
12	5 of 5	15	04Z1392	881-03122004-26-012	On concrete floor, random	< 0.1
13	5 of 5	10C	04Z1450	881-03192004-313-013	On Mezz floor, random	< 0.1
14	5 of 5	15	04Z1392	881-03122004-26-014	On concrete floor, random	< 0.1
15	5 of 5	199A	04D0799	881-05232004-313-015	On concrete floor, random	< 0.1
16	5 of 5	10	04Z1450	881-03192004-313-016	On concrete floor, random	< 0.1
17	5 of 5	16	04Z1392	881-03122004-26-017	On concrete floor, random	< 0.1
18	5 of 5	13	04Z1392	881-03122004-26-018	On concrete floor, random	< 0.1
21	5 of 5	15	04Z1392	881-03122004-26-021	On concrete floor, random	< 0.1
22	5 of 5	17	04Z1392	881-03122004-26-022	On concrete floor, random	< 0.1
23	5 of 5	17	04Z1392	881-03122004-26-023	On concrete floor, random	< 0.1
24	5 of 5	12	04Z1392	881-03122004-26-024	On concrete floor, random	< 0.1
25	5 of 5	15	04Z1392	881-03122004-26-025	On concrete floor, random	< 0.1
26	5 of 5	15	04Z1392	881-03122004-26-026	On concrete floor, random	< 0.1
31	5 of 5	10C	04Z1450	881-03192004-313-031	On concrete floor, random	< 0.1
33	5 of 5	16	04Z1392	881-03122004-26-033	On concrete floor, random	< 0.1
34	5 of 5	11	04Z1392	881-03122004-26-034	On concrete floor, random	< 0.1
35	5 of 5	16	04Z1392	881-03122004-26-035	On concrete floor, random	< 0.1
36	5 of 5	15	04Z1392	881-03122004-26-036	On concrete floor, random	< 0.1
37	5 of 5	10C	04Z1450	881-03192004-313-037	On concrete floor, random	< 0.1
39	5 of 5	10	04Z1450	881-03192004-313-039	On concrete floor, random	< 0.1
40	5 of 5	16	04Z1392	881-03122004-26-040	On concrete floor, random	< 0.1
41	5 of 5	10B	04Z1450	881-03192004-313-041	On concrete floor, random	< 0.1
42	5 of 5	10	04Z1450	881-03192004-313-042	On concrete floor, random	< 0.1
43	5 of 5	15	04Z1392	881-03122004-26-043	On concrete floor, random	< 0.1
44	5 of 5	12	04Z1392	881-03122004-26-044	On concrete floor, random	< 0.1
45	5 of 5	12	04Z1392	881-03122004-26-045	On concrete floor, random	< 0.1
46	5 of 5	10	04Z1450	881-03192004-313-046	On concrete floor, random	< 0.1
47	5 of 5	10C	04Z1450	881-03192004-313-047	On Mezz floor, random	< 0.1
49	5 of 5	15	04Z1392	881-03122004-26-049	On concrete floor, random	< 0.1
50	5 of 5	10C	04Z1450	881-03192004-313-050	On concrete floor, random	< 0.1
51	5 of 5	10	04Z1450	881-03192004-313-051	On concrete floor, random	< 0.1
52	5 of 5	17	04Z1392	881-03122004-26-052	On concrete floor, random	< 0.1
53	5 of 5	13	04Z1392	881-03122004-26-053	On concrete floor, random	< 0.1
54	5 of 5	12	04Z1392	881-03122004-26-054	On concrete floor, random	< 0.1
55	5 of 5	111A	04Z1392	881-03122004-26-055	On concrete floor, random	< 0.1
56	5 of 5	10	04Z1450	881-03192004-313-056	On concrete floor, random	< 0.1
57	5 of 5	133A	04Z1392	881-03122004-26-057	On concrete floor, random	< 0.1
59	5 of 5	10	04Z1450	881-03192004-313-059	On concrete floor, random	< 0.1
60	5 of 5	15	04Z1392	881-03122004-26-060	On concrete floor, random	< 0.1
61	5 of 5	15	04Z1392	881-03122004-26-061	On concrete floor, random	< 0.1
62	5 of 5	11	04Z1392	881-03122004-26-062	On concrete floor, random	< 0.1
63	5 of 5	10C	04Z1450	881-03192004-313-063	On concrete floor, random	< 0.1
64	5 of 5	15	04Z1392	881-03122004-26-064	On concrete floor, random	< 0.1
65	5 of 5	17	04Z1392	881-03122004-26-065	On concrete floor, random	< 0.1
66	5 of 5	10B	04Z1450	881-03192004-313-007	On Mezz floor, biased	< 0.1
67	5 of 5	10B	04Z1450	881-03192004-313-057	On Mezz floor, biased	< 0.1
70	5 of 5	199A	04D0799	881-05232004-313-070	On stainless steel floor, random	< 0.1

Sample Map Location #	Sample Map Page #	Room	RIN	Sample Number	Sample Location	Result (ug/100 cm2)
71	5 of 5	199A	04D0799	881-05232004-313-071	On stainless steel floor, random	< 0.1
72	5 of 5	199A	04D0799	881-05232004-313-072	On stainless steel floor, random	< 0.1
77	5 of 5	149A	04D0799	881-05232004-313-077	On concrete floor, random	< 0.1

Footnotes:

- (1) Some Sample Map Location numbers are used more than once on the same Sample Map page, however each is unique in terms of the room numbers.
- (2) Only the final "as left" condition sample results are reported in the above table. Any areas requiring decontamination were cleaned and resurveyed and reported above.
- (3) The majority of the interior walls have been removed, thus each floor is general just a few wide open rooms. Therefore, sample results in adjoining rooms are representative of adjacent rooms where no samples were collected.

ATTACHMENT C-2

In-Process Biased Beryllium Data

Note: Data that has been lined out was in locations
not applicable to this report.

Industrial Hygiene Information System

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Building No	Sample Number	Sample Work Pkg	Comp	Room Location	Analyte Name	Concentration
881	Sample Work Pkg - Comp - Room Location					
	881-03122004-26-001	WIPE	KH	15 MU-M/SEE MAP	BERYLLIUM AND B < 0.1000 _ UG/100CM	
	881-03122004-26-004	WIPE	KH	15 MU-M/SEE MAP	BERYLLIUM AND B < 0.1000 _ UG/100CM	
	881-03122004-26-005	WIPE	KH	15 MU-M/SEE MAP	BERYLLIUM AND B < 0.1000 _ UG/100CM	
	881-03122004-26-007	WIPE	KH	15 MU-M/SEE MAP	BERYLLIUM AND B < 0.1000 _ UG/100CM	
	Sample Work Pkg - Comp - Room Location					
	881-03122004-26-012	WIPE	KH	15 MU-M/SEE MAP	BERYLLIUM AND B < 0.1000 _ UG/100CM	
	881-03122004-26-014	WIPE	KH	15 MU-M/SEE MAP	BERYLLIUM AND B < 0.1000 _ UG/100CM	
	881-03122004-26-017	WIPE	KH	16 MU-M/SEE MAP	BERYLLIUM AND B < 0.1000 _ UG/100CM	
	881-03122004-26-018	WIPE	KH	13 MU-M/SEE MAP	BERYLLIUM AND B < 0.1000 _ UG/100CM	
881	881-03122004-26-021	WIPE	KH	15 MU-M/SEE MAP	BERYLLIUM AND B < 0.1000 _ UG/100CM	
	881-03122004-26-022	WIPE	KH	17 MU-M/SEE MAP	BERYLLIUM AND B < 0.1000 _ UG/100CM	
	881-03122004-26-023	WIPE	KH	Room Location		

DOES NOT CONTAIN
OFFICIAL USE ONLY INFORMATION

Name/Org: *Shirley J. Pae* Date: *11/5/08*
Directed by: *J.A. Neshem* DOE M471.3-1

Industrial Hygiene Information System
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Building No

Sample Number	Sample Work Pkg	Comp	Room Location	Analyte Name	Concentration
881					
881-03122004-26-023	Sample Work Pkg WIPE	Comp KH	Room Location 17 MU-M/SEE MAP	BERYLLIUM AND B < 0.1000	UG/100CM
881-03122004-26-024	Sample Work Pkg WIPE	Comp KH	Room Location 12 MU-M/SEE MAP	BERYLLIUM AND B < 0.1000	UG/100CM
881-03122004-26-025	Sample Work Pkg WIPE	Comp KH	Room Location 15 MU-M/SEE MAP	BERYLLIUM AND B < 0.1000	UG/100CM
881-03122004-26-026	Sample Work Pkg WIPE	Comp KH	Room Location 15 MU-M/SEE MAP	BERYLLIUM AND B < 0.1000	UG/100CM
881-03122004-26-033	Sample Work Pkg WIPE	Comp KH	Room Location 16 MU-M/SEE MAP	BERYLLIUM AND B < 0.1000	UG/100CM
881-03122004-26-034	Sample Work Pkg WIPE	Comp KH	Room Location 11 MU-M/SEE MAP	BERYLLIUM AND B < 0.1000	UG/100CM
881-03122004-26-035	Sample Work Pkg WIPE	Comp KH	Room Location 16 MU-M/SEE MAP	BERYLLIUM AND B < 0.1000	UG/100CM
881-03122004-26-036	Sample Work Pkg WIPE	Comp KH	Room Location 15 MU-M/SEE MAP	BERYLLIUM AND B < 0.1000	UG/100CM
881-03122004-26-040	Sample Work Pkg WIPE	Comp KH	Room Location 16 MU-M/SEE MAP	BERYLLIUM AND B < 0.1000	UG/100CM
881-03122004-26-043	Sample Work Pkg WIPE	Comp KH	Room Location 15 MU-M/SEE MAP	BERYLLIUM AND B < 0.1000	UG/100CM
881-03122004-26-044	Sample Work Pkg WIPE	Comp KH	Room Location 12 MU-M/SEE MAP	BERYLLIUM AND B < 0.1000	UG/100CM
881-03122004-26-045	Sample Work Pkg WIPE	Comp KH	Room Location 12 MU-M/SEE MAP	BERYLLIUM AND B < 0.1000	UG/100CM
881-03122004-26-049	Sample Work Pkg WIPE	Comp KH	Room Location		

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Building No

Sample Number

Sample Work Pkg Comp

Room Location

Analyte Name

Concentration

881

881-03122004-26-049	Sample Work Pkg WIPE	Comp KH	Room Location 15 MU-M/SEE MAP	BERYLLIUM AND B < 0.1000 _ UG/100CM	
881-03122004-26-052	Sample Work Pkg WIPE	Comp KH	Room Location 17 MU-M/SEE MAP	BERYLLIUM AND B < 0.1000 _ UG/100CM	
881-03122004-26-053	Sample Work Pkg WIPE	Comp KH	Room Location 13 MU-M/SEE MAP	BERYLLIUM AND B < 0.1000 _ UG/100CM	
881-03122004-26-054	Sample Work Pkg WIPE	Comp KH	Room Location 12 MU-M/SEE MAP	BERYLLIUM AND B < 0.1000 _ UG/100CM	
881-03122004-26-055	Sample Work Pkg WIPE	Comp KH	Room Location 13 MU-M/SEE MAP	BERYLLIUM AND B < 0.1000 _ UG/100CM	
881-03122004-26-057	Sample Work Pkg WIPE	Comp KH	Room Location 15 MU-M/SEE MAP	BERYLLIUM AND B < 0.1000 _ UG/100CM	
881-03122004-26-060	Sample Work Pkg WIPE	Comp KH	Room Location 15 MU-M/SEE MAP	BERYLLIUM AND B < 0.1000 _ UG/100CM	
881-03122004-26-061	Sample Work Pkg WIPE	Comp KH	Room Location 15 MU-M/SEE MAP	BERYLLIUM AND B < 0.1000 _ UG/100CM	
881-03122004-26-062	Sample Work Pkg WIPE	Comp KH	Room Location 11 MU-M/SEE MAP	BERYLLIUM AND B < 0.1000 _ UG/100CM	
881-03122004-26-064	Sample Work Pkg WIPE	Comp KH	Room Location 15 MU-M/SEE MAP	BERYLLIUM AND B < 0.1000 _ UG/100CM	
881-03122004-26-065	Sample Work Pkg WIPE	Comp KH	Room Location 17 MU-M/SEE MAP	BERYLLIUM AND B < 0.1000 _ UG/100CM	

Sample Work Pkg Comp Room Location

Sample Work Pkg Comp Room Location

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Building No

Sample Number

Sample Work Pkg Comp Room Location

Analyte Name

Concentration

881

Sample Work Pkg Comp Room Location

Sample Work Pkg Comp Room Location

Sample Work Pkg Comp Room Location

Sample Work Pkg Comp Room Location

Sample Work Pkg Comp Room Location

Sample Work Pkg Comp Room Location

Sample Work Pkg Comp Room Location

Sample Work Pkg Comp Room Location

Sample Work Pkg Comp Room Location

881-03182004-313-021

Sample Work Pkg Comp Room Location

WIPE

FE

SOUT FLOOR/SEE MAP

BERYLLIUM AND B < 0.1000 _ UG/100CM

881-03182004-313-022

Sample Work Pkg Comp Room Location

WIPE

FE

SOUT FLOOR/SEE MAP

BERYLLIUM AND B < 0.1000 _ UG/100CM

881-03182004-313-023

Sample Work Pkg Comp Room Location

WIPE

FE

SOUT FLOOR/SEE MAP

BERYLLIUM AND B < 0.1000 _ UG/100CM

881-03182004-313-024

Sample Work Pkg Comp Room Location

WIPE

FE

Room Location

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Building No

Sample Number	Sample Work Pkg	Comp	Room Location	Analyte Name	Concentration
881					
881-03182004-313-024	Sample Work Pkg	Comp	Room Location		
	WIPE	FE	SOUT FLOOR/SEE MAP	BERYLLIUM AND B < 0.1000	UG/100CM
881-03182004-313-025	Sample Work Pkg	Comp	Room Location		
	WIPE	FE	SOUT FLOOR/SEE MAP	BERYLLIUM AND B < 0.1000	UG/100CM
881-03192004-313-003	Sample Work Pkg	Comp	Room Location		
	WIPE	FE	10 MU-F/SEE MAP/CLEARANCE	BERYLLIUM AND B < 0.1000	UG/100CM
881-03192004-313-007	Sample Work Pkg	Comp	Room Location		
	WIPE	FE	10 MU-F/MEZZ TOP OF 10B/SEE MAP/CLEARANCE	BERYLLIUM AND B < 0.1000	UG/100CM
881-03192004-313-010	Sample Work Pkg	Comp	Room Location		
	WIPE	FE	10 MU-F/SEE MAP/CLEARANCE	BERYLLIUM AND B < 0.1000	UG/100CM
881-03192004-313-011	Sample Work Pkg	Comp	Room Location		
	WIPE	FE	10 MU-F/SEE MAP/CLEARANCE	BERYLLIUM AND B < 0.1000	UG/100CM
881-03192004-313-013	Sample Work Pkg	Comp	Room Location		
	WIPE	FE	10 MU-F/MEZZ OF 10C/SEE MAP/CLEARANCE	BERYLLIUM AND B < 0.1000	UG/100CM
881-03192004-313-016	Sample Work Pkg	Comp	Room Location		
	WIPE	FE	10 MU-F/SEE MAP/CLEARANCE	BERYLLIUM AND B < 0.1000	UG/100CM
881-03192004-313-031	Sample Work Pkg	Comp	Room Location		
	WIPE	FE	OUTS MU-F/BELOW SEALED DUCT/SEE MAP/CLEARANCE	BERYLLIUM AND B < 0.1000	UG/100CM
881-03192004-313-037	Sample Work Pkg	Comp	Room Location		
	WIPE	FE	10 MU-F/SEE MAP/CLEARANCE	BERYLLIUM AND B < 0.1000	UG/100CM
881-03192004-313-039	Sample Work Pkg	Comp	Room Location		
	WIPE	FE	10 MU-F/SEE MAP/CLEARANCE	BERYLLIUM AND B < 0.1000	UG/100CM
881-03192004-313-041	Sample Work Pkg	Comp	Room Location		
	WIPE	FE	10 MU-F/SEE MAP/CLEARANCE	BERYLLIUM AND B < 0.1000	UG/100CM
881-03192004-313-042	Sample Work Pkg	Comp	Room Location		
	WIPE	FE			

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Building No

Sample Number	Sample Work Pkg	Comp	Room Location	Analyte Name	Concentration
881					
881-03192004-313-042	Sample Work Pkg	Comp	Room Location		
	WIPE	FE	10 MU-F/SEE MAP/CLEARANCE	BERYLLIUM AND B < 0.1000	UG/100CM
881-03192004-313-046	Sample Work Pkg	Comp	Room Location		
	WIPE	FE	10 MU-F/SEE MAP/CLEARANCE	BERYLLIUM AND B < 0.1000	UG/100CM
881-03192004-313-047	Sample Work Pkg	Comp	Room Location		
	WIPE	FE	10 MU-F/MEZZ OF 10C/SEE MAP/CLEARANCE	BERYLLIUM AND B < 0.1000	UG/100CM
881-03192004-313-050	Sample Work Pkg	Comp	Room Location		
	WIPE	FE	10C MU-F/SEE MAP/CLEARANCE	BERYLLIUM AND B < 0.1000	UG/100CM
881-03192004-313-051	Sample Work Pkg	Comp	Room Location		
	WIPE	FE	10 MU-F/SEE MAP/CLEARANCE	BERYLLIUM AND B < 0.1000	UG/100CM
881-03192004-313-056	Sample Work Pkg	Comp	Room Location		
	WIPE	FE	10 MU-F/NEAR TANK CONTAINMENT/SEE MAP/CLEAR	BERYLLIUM AND B < 0.1000	UG/100CM
881-03192004-313-057	Sample Work Pkg	Comp	Room Location		
	WIPE	FE	10B MU-F/MEZZ OF 10B/SEE MAP/CLEARANCE	BERYLLIUM AND B < 0.1000	UG/100CM
881-03192004-313-059	Sample Work Pkg	Comp	Room Location		
	WIPE	FE	10 MU-F/NEAR STAIRWAY/SEE MAP/CLEARANCE	BERYLLIUM AND B < 0.1000	UG/100CM
881-03192004-313-063	Sample Work Pkg	Comp	Room Location		
	WIPE	FE	10C MU-F/SEE MAP/CLEARANCE	BERYLLIUM AND B < 0.1000	UG/100CM
	Sample Work Pkg	Comp	Room Location		
	Sample Work Pkg	Comp	Room Location		
	Sample Work Pkg	Comp	Room Location		
	Sample Work Pkg	Comp	Room Location		

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Building No

Sample Number Sample Work Pkg Comp Room Location Analyte Name Concentration

881

	Sample Work Pkg	Comp	Room Location		
881-04092004-500-001	WIPE	KH	10 TANK CONTAINMENT/TOP OF PIPE	BERYLLIUM AND B < 0.1000	UG/100CM
881-04092004-500-002	WIPE	KH	10 TANK CONTAINMENT/INSIDE LEDGE OF OVAL LA	BERYLLIUM AND B < 0.1000	UG/100CM
881-04092004-500-003	WIPE	KH	10 TANK CONTAINMENT/TOP OF TANK	BERYLLIUM AND B < 0.1000	UG/100CM
881-04092004-500-004	WIPE	KH	10 TANK CONTAINMENT/BEAM UNDER TANK (MIDDLE	BERYLLIUM AND B < 0.1000	UG/100CM
881-04092004-500-005	WIPE	KH	10 TANK CONTAINMENT/FLOOR (UNDER TANK)	BERYLLIUM AND B < 0.1000	UG/100CM
881-04092004-617-022	WIPE	UNK	17 FLOOR/SEE MAP	BERYLLIUM AND B < 0.1000	UG/100CM
881-04092004-617-023	WIPE	UNK	17 FLOOR/SEE MAP	BERYLLIUM AND B < 0.1000	UG/100CM
881-04092004-617-052	WIPE	UNK			

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Building No

Sample Number

Sample Work Pkg Comp

Room Location

Analyte Name

Concentration

881

881-04092004-617-052	Sample Work Pkg Comp WIPE UNK	Room Location 17 FLOOR/SEE MAP	BERYLLIUM AND B < 0.1000 _ UG/100CM
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881-04092004-617-065	Sample Work Pkg Comp WIPE UNK	Room Location 17 FLOOR/SEE MAP	BERYLLIUM AND B < 0.1000 _ UG/100CM
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Sample Work Pkg Comp Room Location

Sample Work Pkg Comp Room Location

Sample Work Pkg Comp Room Location

Sample Work Pkg Comp Room Location

Sample Work Pkg Comp Room Location

Sample Work Pkg Comp Room Location

Sample Work Pkg Comp Room Location

Sample Work Pkg Comp Room Location

Sample Work Pkg Comp Room Location

Sample Work Pkg Comp Room Location

Sample Work Pkg Comp Room Location

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Building No

Sample Number

Sample Work Pkg Comp

Room Location

Analyte Name

Concentration

881

	Sample Work Pkg Comp	Room Location		
	Sample Work Pkg Comp	Room Location		
	Sample Work Pkg Comp	Room Location		
	Sample Work Pkg Comp	Room Location		
	Sample Work Pkg Comp	Room Location		
881-12232003-613-003	Sample Work Pkg Comp WIPE BART	Room Location 11 FLOOR		BERYLLIUM AND B < 0.1000 _ UG/100CM
881-12232003-613-004	Sample Work Pkg Comp WIPE BART	Room Location 11 FLOOR		BERYLLIUM AND B < 0.1000 _ UG/100CM
881-12232003-613-005	Sample Work Pkg Comp WIPE BART	Room Location 11 FLOOR		BERYLLIUM AND B < 0.1000 _ UG/100CM
881-12232003-613-006	Sample Work Pkg Comp WIPE BART	Room Location 11 FLOOR		BERYLLIUM AND B < 0.1000 _ UG/100CM
881-12232003-613-007	Sample Work Pkg Comp WIPE BART	Room Location 11 FLOOR		BERYLLIUM AND B < 0.1000 _ UG/100CM
881-12232003-613-008	Sample Work Pkg Comp WIPE BART	Room Location 11 FLOOR		BERYLLIUM AND B < 0.1000 _ UG/100CM
881-12232003-613-009	Sample Work Pkg Comp WIPE BART	Room Location 11 FLOOR		BERYLLIUM AND B < 0.1000 _ UG/100CM
881-12232003-613-010	Sample Work Pkg Comp WIPE BART	Room Location		

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Building No

Sample Number

Sample Work Pkg Comp

Room Location

Analyte Name

Concentration

881

881-12232003-613-010	Sample Work Pkg Comp WIPE BART	Room Location 11 FLOOR	BERYLLIUM AND B < 0.1000 _ UG/100CM
----------------------	-----------------------------------	---------------------------	-------------------------------------

Sample Work Pkg Comp Room Location
WIPE BART 11 FLOOR

Sample Work Pkg Comp Room Location

Sample Work Pkg Comp Room Location

Sample Work Pkg Comp Room Location

Sample Work Pkg Comp Room Location

Sample Work Pkg Comp Room Location

Sample Work Pkg Comp Room Location

Sample Work Pkg Comp Room Location

TOTAL SAMPLES: 417

ATTACHMENT D

Data Quality Assessment (DQA) Detail

DATA QUALITY ASSESSMENT (DQA)

VERIFICATION & VALIDATION (V&V) OF RESULTS

V&V of the data confirm that appropriate quality controls are implemented throughout the sampling and analysis process, and that any substandard controls result in qualification or rejection of the data in question. The required quality controls and their implementation are summarized in a tabular, checklist format for each category of data – radiological surveys and chemical analyses (specifically beryllium).

DQA criteria and results are provided in a tabular format for each suite of surveys or chemical analyses performed. The radiological survey assessment is provided in Table D-1 and Beryllium in Table D-2. A data completeness summary for all results is given in Table D-3.

All relevant Quality records supporting this report are maintained in the RISS Characterization Project File. The report will be submitted to the CERCLA Administrative Record for permanent storage within 30 days of approval by the Regulators. All radiological data are organized into Survey Packages, which correlate to unique (MARSSIM) Survey Units. Chemical data are organized by RIN (Report Identification Number) and are traceable to the sample number and corresponding sample location.

Media samples were taken and analyzed by ISOCS Canberra gamma spectroscopy. Transuranic isotope activity and Uranium and/or other naturally occurring isotope activity were evaluated against, and were less than the Transuranic DCGL_w (100 dpm/100cm²) and the Uranium DCGL_w (5,000 dpm/100cm²) unrestricted release limits. Media results were converted to dpm/100cm² using media conversion tables, evaluated against the transuranic and uranium DCGL limits, and are the values reported in Attachment B-1. Survey designs were implemented for Building 881 basement based on the transuranic or uranium limits (DCGLs), as applicable, in the unrestricted release decision process. Survey results were evaluated against, and were less than the Transuranic DCGL_w (100 dpm/100cm²) (i.e., SU 881M01) or the Uranium DCGL_w (5,000 dpm/100cm²) unrestricted release limits (all other survey units), as applicable. On this basis, all PDS results were less than the PDSP unrestricted release limits.

Consistent with EPA's G-4 DQO process, the radiological survey design for each survey unit performed per PDS requirements was optimized by checking actual measurement results acquired during pre-demolition surveys against the model output with original estimates. Use of actual sample/survey (result) variances in the MARSSIM DQO model confirms that an adequate number of surveys were acquired.

There was one short stub of embedded process waste pipe that could not be removed from the 881 Basement Room 12 exterior concrete wall. DOE and CDPHE agreed that this stub of piping could remain in-placed and be buried with the rest of the basement structure – refer to Contact Record dated May 20th, 2004 from Dyan Foss in the Administrative Record.

DQA SUMMARY

In summary, the data presented in this report have been verified and validated relative to the quality requirements and project decisions as stated in the original DQOs. All data are useable based on qualifications stated herein and are considered satisfactory without qualification. All media surveyed and sampled yielded results less than their associated action levels and with acceptable certainties.

Media samples were collected in accordance with the Pre-Demolition Survey Plan for D&D Facilities (MAN-127-PDSP) requirements. The media sample results and sample location maps are located in Attachments B-1 and the RISS Characterization Project files. All final "as left" results for media samples were below the Transuranic and/or Uranium unrestricted release limits as applicable. Although these survey units are not included in Table D, *Data Completeness Summary*, the packages were reviewed as part of the DQA process and verified that the original project DQOs satisfied MARSSIM guidance and DQO objectives were met.

Based upon an independent review of the radiological data, it was determined that the original project DQOs satisfied MARSSIM guidance. Facility contamination levels were below applicable DCGL unrestricted release levels. Minimum survey requirements were met, sampling/survey protocol was performed in accordance with applicable RSPs, survey units were properly designed and bounded, and instrument performance and calibration were within acceptable limits. All final "as left" results meet the PDS unrestricted release.

Chain of Custody was intact; documentation was complete, hold times were acceptable (where applicable,) and packaging integrity/custody seals were maintained throughout the sampling/analysis process. Level 1 Isolation Controls have been posted to prevent the inadvertent introduction of further contamination into the Building 881 Basement. On this basis, the Building 881 Basement meets the unrestricted release criteria with the confidences stated herein.

Table D-1 V&V of Radiological Results - Building 881 Basement

V&V CRITERIA, RADIOLGICAL SURVEYS		K-H RSP 16.00 Series MARSSIM (NUREG-1575)		
QUALITY REQUIREMENTS				
	Parameters	Measure	Frequency	COMMENTS
ACCURACY	Initial calibrations	90%<x<110%	≥1	Multi-point calibration through the measurement range encountered in the field; programmatic records.
	Daily source checks	80%<x<120%	≥1/day	Performed daily/within range.
	Local area background: Field	typically < 10 dpm	≥1/day	All local area backgrounds were within expected ranges (i.e., no elevated anomalies.)
PRECISION	Field duplicate measurements for TSA	≥5% of real survey points	≥10% of reals	N/A
REPRESENTATIVENESS	MARSSIM methodology: Survey Units 881F01, 881F02, 881F03, 881M01, 881M02, 881M03, 881M04 AND 881M07 (interior).	statistical and biased	NA	Random w/ statistical confidence.
	Survey Maps	NA	NA	Random and biased measurement locations controlled/mapped to ±1m.
	Controlling Documents (Characterization Pkg; RSPs)	Qualitative	NA	Refer to the Characterization Package (planning document) for field/sampling procedures (located in Project files); thorough documentation of the planning, sampling/analysis process, and data reduction into formats.
COMPARABILITY	Units of measure	dpm/100cm ²	NA	Use of standardized engineering units in the reporting of measurement results.
COMPLETENESS	Plan vs. Actual surveys Usable results vs. unusable	>95% >95%	NA	See Table D-3 for details.
SENSITIVITY	Detection limits	TSA: ≤2,500 dpm/100cm ² RA: ≤500 dpm/100cm ² (Uranium), TSA: ≤50 dpm/100cm ² RA: ≤10 dpm/100cm ² (Transuranic)	all measures	MDAs ≤ 50% DCGL _w per MARSSIM guidelines.

Table D-2 V&V of Beryllium Results - Building 881 Basement

V&V CRITERIA, CHEMICAL ANALYSES		DATA PACKAGE		
BERYLLIUM	Prep: NMAM 7300 METHOD: OSHA ID-125G	LAB ---->	Johns Manville Littleton, Colorado	
		RIN ---->	RIN04Z1392 RIN04Z1450 RIN04D0799	
QUALITY REQUIREMENTS		Measure	Frequency	COMMENTS
ACCURACY	Calibrations Initial	linear calibration	≥1	All beryllium results were below the unrestricted release levels.
	Continuing	80%<%R<120%	≥1	
	LCS/MS	80%<%R<120%	≥1	
	Blanks – lab & field	<MDL	≥1	
	Interference check std (ICP)	NA	NA	
PRECISION	LCSD	80%<%R<120% (RPD<20%)	≥1	
	Field duplicate	all results < RL	≥1	
REPRESENTATIVENESS	COC	Qualitative	NA	
	Hold times/preservation	Qualitative	NA	
	Controlling Documents (Plans, Procedures, maps, etc.)	Qualitative	NA	
COMPARABILITY	Measurement units	ug/100cm ²	NA	
COMPLETENESS	Plan vs. Actual samples	>95%	NA	
	Usable results vs. unusable	>95%		
SENSITIVITY	Detection limits	MDL of 0.00084 ug/swipe	all measures	

Table D-3 Data Completeness Summary - Building 881 Basement

ANALYTE	Building/Area/Unit	Sample Number Planned (Real & QC)	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Beryllium	Building 881 Basement (interior)	49 random (interior)	58 samples (56 random/2 biased) interior	No Be contamination found at any location, all results less than associated action levels	10CFR850; OSHA ID-125G <ul style="list-style-type: none"> RIN04Z1392: sample locations 1, 4, 5, 7, 9, 12, 14, 17, 18, 21, 22, 23, 24, 25, 26, 33, 34, 35, 36, 40, 43, 44, 45, 49, 52, 53, 54, 55, 57, 60, 61, 62, 64 and 65 RIN04Z1450: sample locations 3, 10, 11, 13, 16, 31, 37, 39, 41, 42, 46, 47, 50, 51, 56, 59, 63, 66 and 67 RIN04D0799: sample locations 15, 70, 71, 72 and 77 All results were below the action level (0.2 ug/100cm ²) and investigative level (0.1 ug/100cm ²).
Radiological	Survey Area (MU) F Survey Unit 881F01 Building 881 – Basement Room 100 Elevator shaft, all surfaces	17 α TSA (15 systematic/2 biased) 17 α Smears (15 systematic/2 biased) 2 QC TSA 100% scan of floor, 50% scan of walls and ceilings	17 α TSA (15 systematic/2 biased) 17 α Smears (15 systematic/2 biased) 2 QC TSA 100% scan of floor, 50% scan of walls and ceilings	No contamination at any location; all locations below PDS unrestricted release levels	Transuranic DCGLs used – for convenience sake only. Area was not a suspect transuranic area. Area met both Transuranic and Uranium DCGLs.
Radiological	Survey Area (MU) F Survey Unit 881F02 Building 881 – Rooms 10, 10B and 10C (Floors)	79 α TSA (systematic) 79 α Smears (systematic) 4 QC TSA 100% scan	75 α TSA (systematic) 75 α Smears (systematic) 4 QC TSA 100% scan	No contamination at any location; all locations below PDS unrestricted release levels	Uranium DCGLs used.

Table D-3 Data Completeness Summary - Building 881 Basement

ANALYTE	Building/Area/Unit	Sample Number Planned (Real & QC)	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Radiological	Survey Area (MU) F Survey Unit 881F03 Building 881 – Rooms 10, 10B and 10C (Walls and Ceilings)	17 α TSA (systematic) 17 α Smears (systematic) 2 QC TSA 50% scan	17 α TSA (systematic) 17 α Smears (systematic) 2 QC TSA 30% scan	No contamination at any location; all locations below PDS unrestricted release levels	Uranium DCGLs used.
Radiological	Survey Area M Survey Unit 881M01 Building 881 (MU-M) – Room 17 floor	20 α TSA (systematic) 20 α Smears (systematic) 2 QC TSA 100% scan	20 α TSA (systematic) 20 α Smears (systematic) 2 QC TSA 100% scan	No contamination at any location; all locations below PDS unrestricted release levels	Transuranic DCGLs used.
Radiological	Survey Area M Survey Unit 881M02 Building 881 (MU-M) – Room 17, walls and ceiling	16 α TSA (systematic) 16 α Smears (systematic) 2 QC TSA 25% scan	16 α TSA (systematic) 16 α Smears (systematic) 2 QC TSA 25% scan	No contamination at any location; all locations below PDS unrestricted release levels	Uranium DCGLs used.
Radiological	Survey Area M Survey Unit 881M03 Building 881 (MU-M) – Rooms 11, 12, 15, 16 and 19 floors	121 α TSA (systematic) 121 α Smears (systematic) 6 QC TSA 100% scan	121 α TSA (systematic) 121 α Smears (systematic) 7 QC TSA 100% scan	No contamination at any location; all locations below PDS unrestricted release levels	Uranium DCGLs used.

Table D-3 Data Completeness Summary - Building 881 Basement

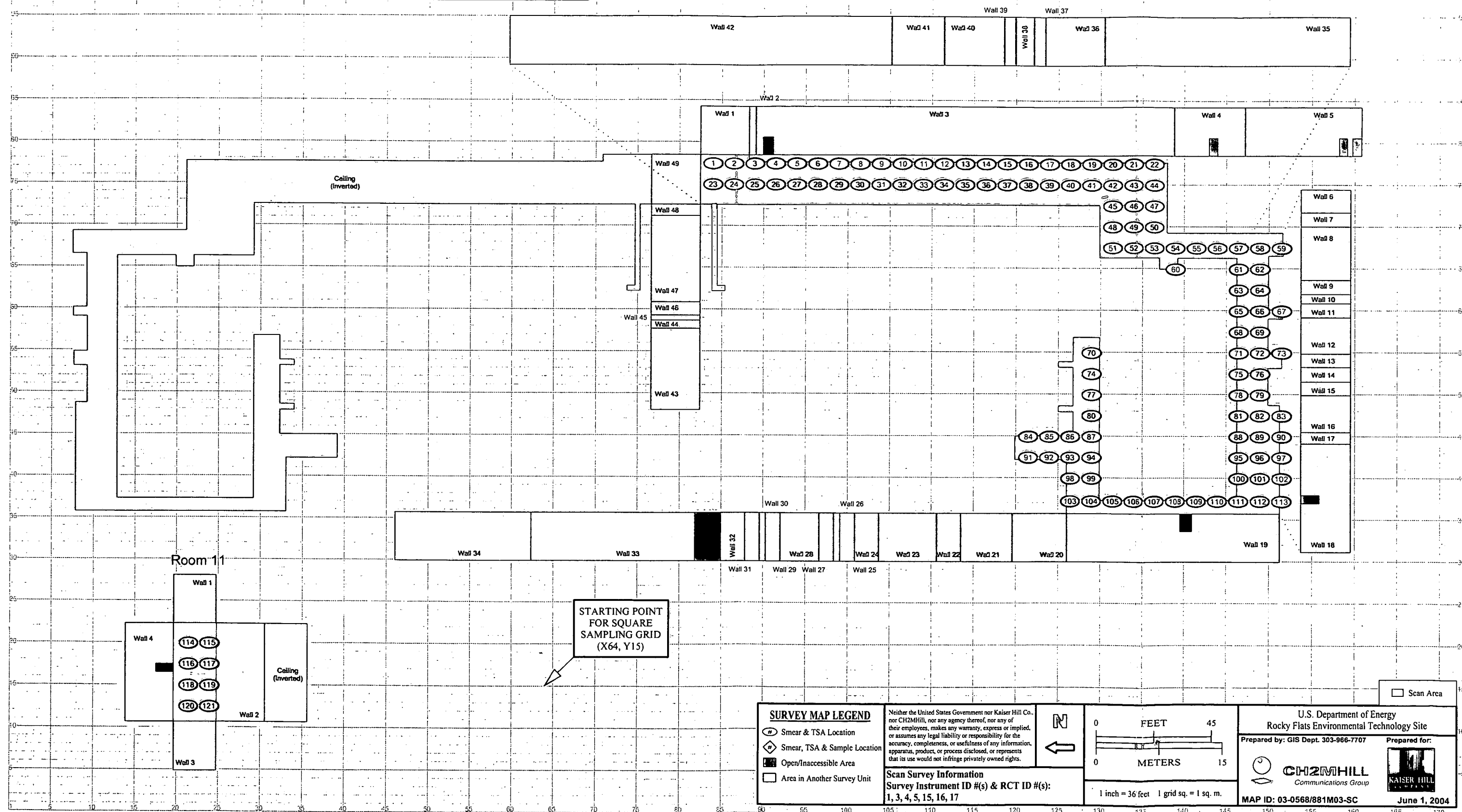
ANALYTE	Building/Area/Unit	Sample Number Planned (Real & QC)	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Radiological	Survey Area M Survey Unit 881M04 Building 881 (MU-M) – Rooms 11, 12, 15, 16 and 19 walls and ceilings	20 α TSA (systematic) 20 α Smears (systematic) 2 QC TSA 25% scan	20 α TSA (systematic) 20 α Smears (systematic) 2 QC TSA 25% scan	No contamination at any location; all locations below PDS unrestricted release levels	Uranium DCGLs used.
Radiological	Survey Area M Survey Unit 881M07 Building 881 (MU-M) – Room 15A floor, walls and ceiling	25 α TSA (systematic) 25 α Smears (systematic) 2 QC TSA 100% scan	25 α TSA (systematic) 25 α Smears (systematic) 3 QC TSA 100% scan	No contamination at any location; all locations below PDS unrestricted release levels	Uranium DCGLs used.

PRE-DEMOLITION SURVEY FOR B881

Survey Area: M Survey Unit: 881M03 Classification: 1
Building: 881
Survey Unit Description: Building 881 Management Unit M, Rooms 11, 12, 15, 16 & 19
Floor
Total Area: 702 sq. m. Total Floor Area: 702 sq. m.
Grid Spacing for Survey Points: 2.5 m. X 2.5 m.

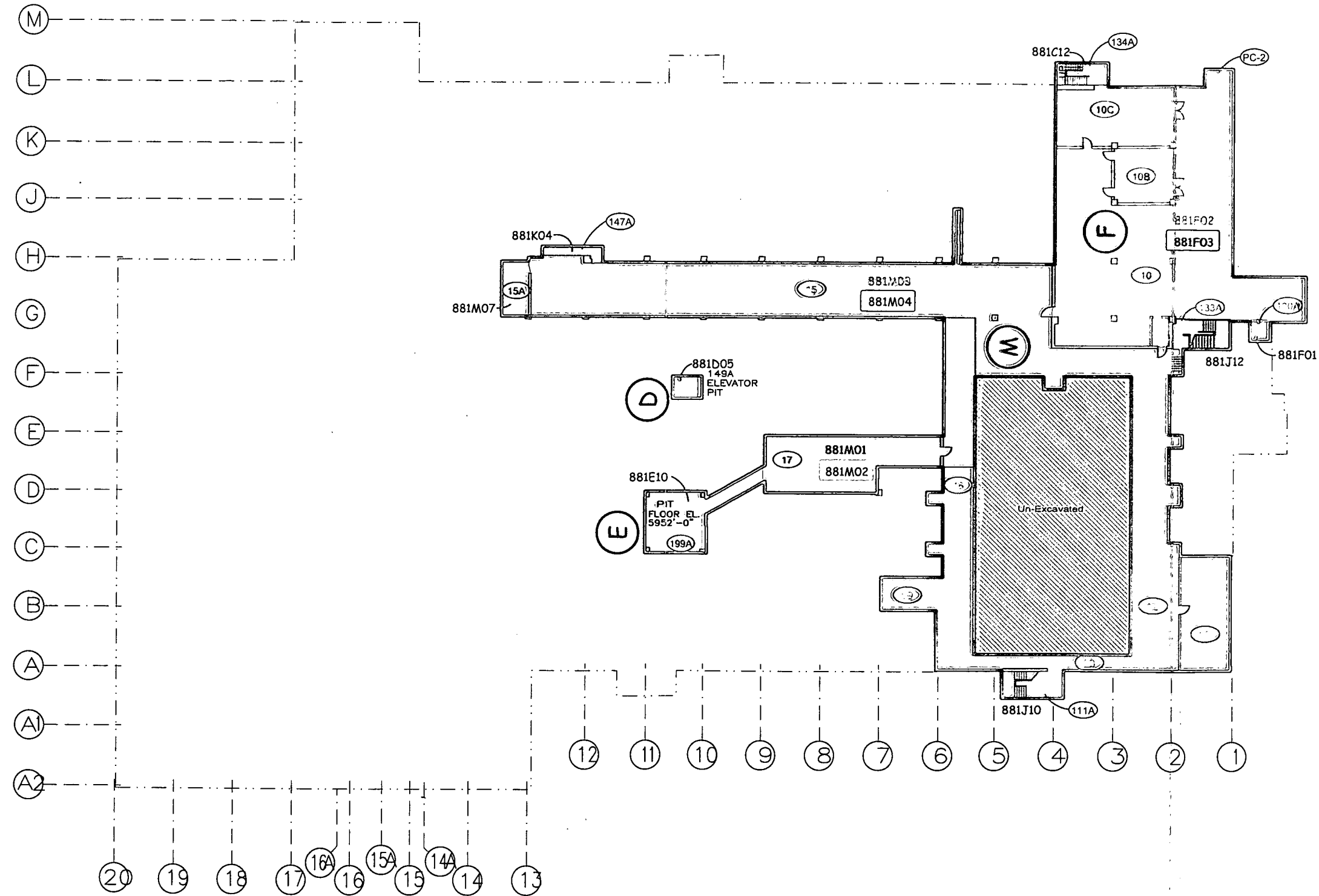
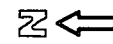
PAGE 1 OF 1

Rooms 12, 15, 16 & 19







☐ Uranium Survey Units
☐ Transuranic Survey Units



Building 881 Basement Management Units

Legend:

- | | | |
|---|--|--|
| Color area indicate the survey unit boundaries | Six digit characters designate survey unit ID. | Six digit characters with white background designate survey unit ID, walls, ceilings, & columns. |
|  | xxxxxx |  |

PRE-DEMOLITION SURVEY FOR B881

Survey Area: F Survey Unit: 881F03 Classification: 2
 Building: 881
 Survey Unit Description: B881 Basement Management Unit F, Rooms 10, 10B & 10C
 Walls, Ceiling & Columns
 Total Area: 1,660 sq. m. Total Floor Area: 519 sq. m.
 Grid Spacing for Survey Points: 11 m. X 11 m.

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Room 10

Room 10C

Room 10B

STARTING POINT
FOR SQUARE
SAMPLING GRID
(X25, Y12)

SURVEY MAP LEGEND

- ① Smear & TSA Location
- ② Smear, TSA & Sample Location
- ③ Open/Inaccessible Area
- ④ Area in Another Survey Unit

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Scan Survey Information
 Survey Instrument ID #(s) & RCT ID #(s):
 1-5, 7 & 8



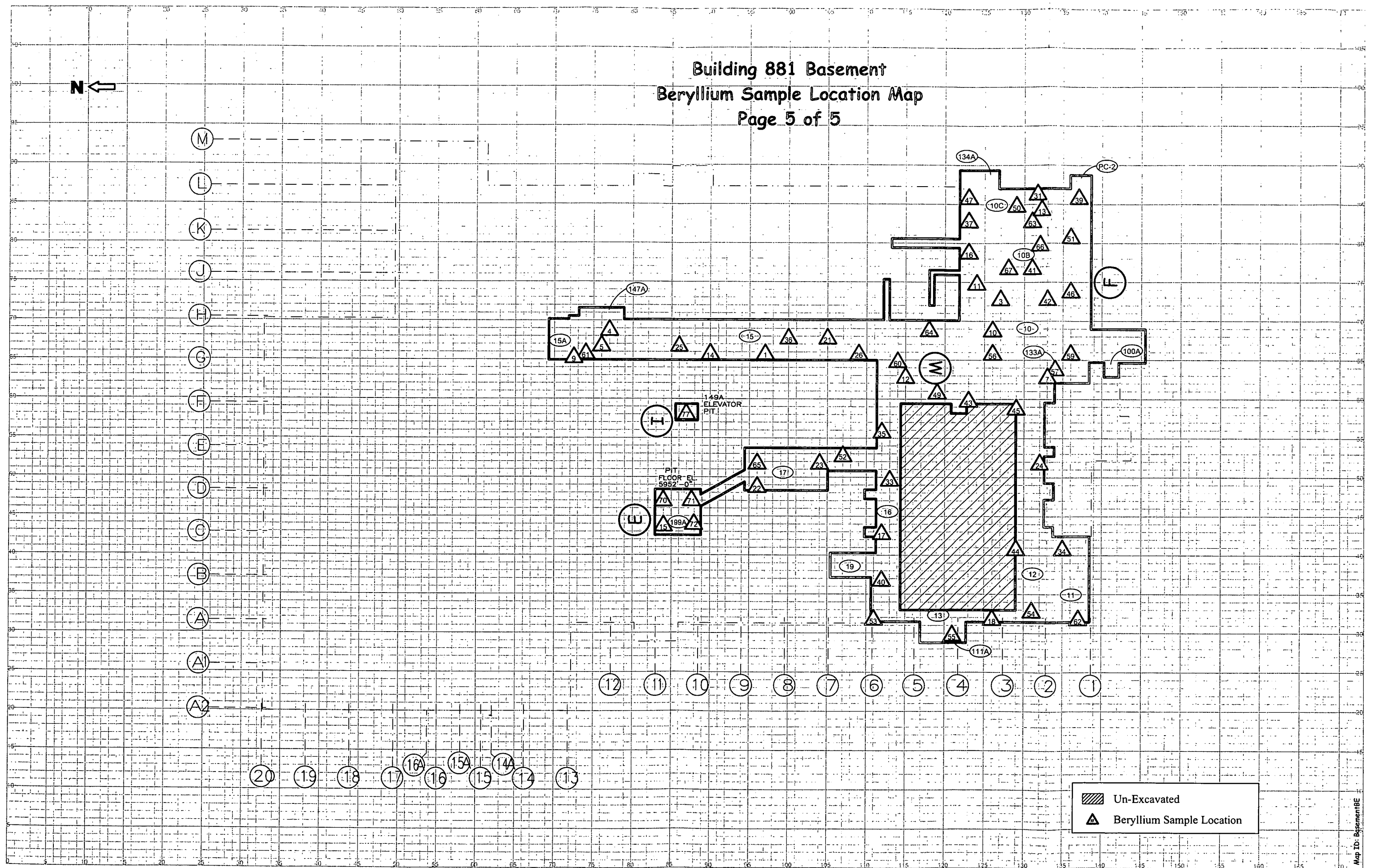
0 40
FEET
0 10
METERS

1 inch = 30 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy
 Rocky Flats Environmental Technology Site
 Prepared by: GIS Dept. 303-988-7707
 CH2MHILL
 Communications Group
 MAP ID: 03-0568/881F03-SC
 May 10, 2003

Scan Area

Building 881 Basement
Beryllium Sample Location Map
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Map ID: BasementBE

PRE-DEMOLITION SURVEY FOR B881

Survey Area: M Survey Unit: 881M04 Classification: 2
 Building: 881
 Survey Unit Description: Building 881 Management Unit M, Rooms 11, 12, 15, 16 & 19
 Walls & Ceiling
 Total Area: 2,946 sq. m. Total Floor Area: 702 sq. m.
 Grid Spacing for Survey Points: 14 m. X 14 m.

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Rooms 12, 15, 16 & 19

